

DISTRIBUTED CONCENTRATION: RETHINKING DECISIVE BATTLE

A Monograph
by
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Infantry



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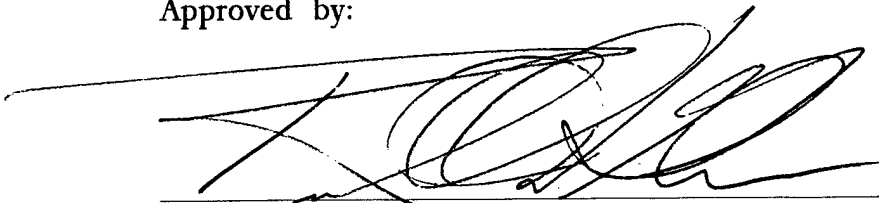
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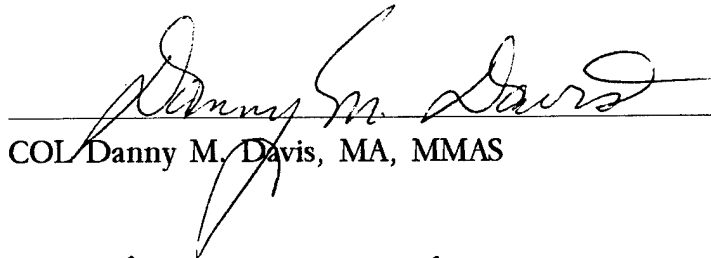
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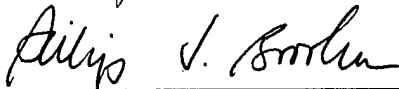
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Abstract

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In 1993, the Bottom-Up Review (BUR) concluded that the United States could fight and win in two nearly simultaneous major regional conflicts (MRCs). Nearly simultaneous required that the two MRCs be spaced at least 42 days apart to allow adequate time to shift forces and resources between theaters. The Secretary of Defense (SECDEF) 1995 Report To The President And The Congress specified that US forces be sized and structured to preserve the flexibility and capability to achieve their objectives without the assistance of allied forces. Based on a Win-Hold-Win formula, the 2 MRC strategy suggests the capability of the United States military to effectively wage decisive battle in one or both of the MRCs. This notion runs contrary to historical and theoretical observations regarding the evolution of warfare. In fact, it implies that the United States has adopted a national security strategy that is unattainable.

This monograph is the result of a historical and theoretical examination of decisive battles and indecisive military contests. An analysis of warfighting concepts, theories and doctrine from the fifteenth century through the twentieth century provides an intellectual foundation for establishing constructs regarding the conduct of contemporary decisive battle. This includes an examination of the nature of decisive battle, the required conditions for its employment, and its viability as an effective operational warfighting method in modern military contests.

The author concludes that decisive battle is still a viable operational warfighting method, but only under specific operational conditions. Recognizing the distributed nature of contemporary warfare, the author offers the concept of distributed concentration to achieve the necessary leverage against an operational decisive point in the initial operational action. A historical analysis of Operation JUST CAUSE demonstrates the utility of employing distributed concentration as a viable operational warfighting method to achieve strategic aims in contemporary military contests.

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DISTRIBUTED CONCENTRATION: RETHINKING DECISIVE BATTLE

INTRODUCTION

The continuing evolution of warfare has brought societal, intellectual and technological changes which, when coupled with the analyses of military historians, theorists and doctrinaires, signal the demise of opportunities for waging decisive battle in contemporary military contests.¹ Analysis during and after World War I suggested that single operations were no longer capable of dictating the outcome of war. Tukhachevskiy and Svechin proclaimed that decision in war came only as a result of successive operations joined in purpose to fulfill a political aim. These conclusions emphasized the inability to achieve the total sum of a nation's war aims in one swift action; in short, the age of decisive battle had passed.

When considering the notion of decisive battle, romantic images of massed armies marching beneath fluttering standards and bedecked in colorful kit appear. Great masses of men and horse flesh are thrown together on a grassy plane in a murderous struggle of horse-drawn cannon, muskets, bayonets and sabers directed in their melee by a great warlord atop a white charger and wielding a marshal's baton. These classic battles occurred within the confines of compact battlefields where all action was compressed into a single point in time and space. Decision was obtained by the side which could more effectively concentrate and apply superior combat power against an exposed enemy vulnerability at precisely the right moment. These actions achieved the shock effects necessary to unbalance an opponent's ability to withstand the continued application of force and secured the political objects of the struggle within the course of a few hours.

Indeed, this was the concept that Gustavus Adolphus II sought when designing his massed armies for Swedish hegemony in Europe. It was one demonstrated by Napoleon and his *Grande Armee*. It further served as the guiding principle for the conduct of warfare well into the earliest years of the twentieth century until the shock of technological reality suggested that perhaps this approach to the conduct of warfare needed revising. Such battle epitomizes the strategy of the single point and stands as a mental model that may limit our approach to attaining similar effects on today's distributed battlefields.

Since the end of the Cold War, our strategic environment has been volatile, uncertain, complex and ambiguous. A somewhat comfortable degree of order and predictability, attributable to confronting the same adversary for 40 years, has been

replaced in some measure by instability, disorder and even chaos. The United States military no longer limits its focus to the containment of communism. Instead it faces a responsibility for stewardship of a complex and dynamic strategic environment rife with challenges for operational planners and commanders. This new strategic environment runs the gamut of conditions from relatively benign humanitarian efforts to countering rogue states which threaten employment of weapons of mass destruction and regional stability contrary to United States interests. This shift of the strategic condition prompted the Department of Defense (DOD) to evaluate its strategy and capabilities against current and perceived future requirements in 1993.

A comprehensive seven-month internal study known as the Bottom-Up Review (BUR) concluded that the United States could fight and win in two nearly simultaneous major regional conflicts (MRCs) with forces capable of rapid power projection and quick, decisive attainment of their objectives.² The BUR concluded that an adequate army force structure to meet the demands of the two MRC strategy consisted of 10 active divisions and 15 enhanced readiness brigades from the United States Army National Guard. The Secretary of Defense (SECDEF) 1995 Report To The President And The Congress specified that US forces must be sized and structured to preserve the flexibility and capability to achieve their objectives without the assistance of allied forces.

Nearly simultaneous required that the two MRCs be spaced at least 42 days apart to allow adequate time to shift forces and resources between theaters.³ Based on a Win-Hold-Win formula, the 2 MRC strategy suggests the capability of the United States military to effectively wage decisive battle in one or both of the MRCs. Military historian Russell F. Weigley concludes that such a notion is improbable. He argues that decisive battle is merely a rationalist effort to make war cost-effective as the promptness of decision through battle promises to prevent an inordinate drain upon the resources of the state.⁴

History indicates that the American people are inherently suspicious of any employment of our nation's armed forces for purposes that may place service members in harm's way. Americans must be convinced that legitimate national interests are at stake. They demand an understandable strategic objective and quick combat decisions at minimum costs. Any deviation from this program contributes to the erosion of national will and threatens to jeopardize public support which, in the end, may prove decisive in defeating further prosecution of the military campaign.⁵

Analysis of the strategic condition and current US military doctrine implies that a quick, decisive resolution of the military contest is a principle governing factor for operational planners committed to either a MRC or to other "smaller-scale" operations.⁶ Protracted engagements detract from our nation's ability to respond decisively to other

strategic requirements and are therefore contrary to our national interests. Decisive battle, the application of force to achieve the rapid resolution of a military contest under politically and economically favorable conditions, should therefore serve as a primary consideration for operational planners.

This notion runs contrary to historical and theoretical observations regarding the evolution of warfare. In fact, it implies that the United States has adopted a national security strategy that is unattainable. Still, the operational commander's challenge is to shape his given environment of conflict to set the conditions necessary for achieving decisive results in all major operations.⁷ How then does the operational commander arrange, orient and apply his available resources in such a manner that he can conduct and win the decisive battles necessary to meet strategic requirements?

The initial part of this monograph is a historical examination of the cyclic nature of decisive battle. An examination of military history and theory pertinent to the evolution of the operational art provides a foundation for understanding the concept of decisive battle, the purposes it originally served and the various reasons for its apparent demise. History demonstrates that patterns of warfare alternated between periods of quick, decisive battles on the one hand, and costly, protracted wars on the other. This recurring cycle was driven by a warfighting symmetry in method, systems and organization that existed between opposing forces. An analyses of the leaders and armies that sought decisive battle but failed in their attempts establishes the foundations for claims concerning the assumed impotency of single operations given the distributed nature of contemporary war.

Dr. James Schneider and Mr. Steven Metz provide insight to the extended and distributed nature of modern war. Carl von Clausewitz cautioned that "war does not consist of a single decisive act [and] that the very nature of war impedes the simultaneous concentration of all forces."⁸ Svechin and Tukhachevskiy would have agreed with the Prussian. They concluded that the distributed nature of modern war had made the single, decisive action impossible to attain. Their observations of World War I had demonstrated that "decision now came as the result of a whole complex of successive, simultaneous, and related operations"; warfare required the application of the operational art.⁹

These observations tend to dissuade any further discussion of the likelihood of waging decisive battle in modern war. It appears, however, that decisive battle and operational art are mutually supporting and that the former is attained only through a coherent application of the latter. Properly focused, distributed tactical and operational actions coalesce to achieve a concentrated effect against operational decisive points. On the contemporary battlefield, those decisive points may exist as distributed vulnerabilities in an opponent's warfighting capability.

Dr. James Schneider characterizes operational art as the creative use of distributed operations, extended in space and time but unified by a common aim.¹⁰ Schneider's analysis provides implications for planners seeking to attain decisive battle effects on the distributed battlefield. Unlike the analyses of Svechin and Tukhachevskiy, his characterization does not demand that operational actions be sequenced or successive.

Schneider's analysis of the operational art offers opportunities for considering how concentrated effects may be achieved across the distributed battlefield. The theory of distributed concentration recognizes that cumulative tactical and operational effects may achieve the shock and concentration of overwhelming combat power necessary to quickly defeat an enemy's center of gravity on the distributed battlefield.

Operations DESERT STORM and JUST CAUSE may be regarded as contemporary decisive battles due to their relative expedience in attaining their specified strategic aims. They are examined in chapters 2 and 3, respectively, from an operational perspective to demonstrate how decisive battle may be waged in contemporary military contests. Significantly different methods were employed in each of these operations. DESERT STORM commanders forced convergence against the enemy's center of gravity at a single point--finite in time and space--for the decisive blow. JUST CAUSE commanders achieved distributed concentration across the whole of the enemy's ability to resist in one swift, decisive action.

This monograph is not intended to be a comprehensive history of battle, warfighting technology, or societal evolution, nor is it a complete analysis of every possible actor and his significant contributions to the solutions regarding battlefield indecision. Instead, the principle themes and factors from selected periods and battles are analyzed to demonstrate how an asymmetrical advantage in method, systems, or organization provided the ability to secure strategic aims in a relatively short run contest following the initial disposition of forces. Individual battles are not discussed in the detail necessary to understand the infinite movements and decisions made which affected the contest's outcome.

Readers of this study should understand that the author does not recognize as decisive those battles which secured war aims only after long periods of exhaustion. For example, the contests at Waterloo and Vicksburg, while significant to the outcome of their parent wars and to the course of civilizations in "all their subsequent scenes", are regarded as battles of culmination.¹¹ The decisions gained in those battles were, in effect, the result of long periods of resource exhaustion for one, or both sides. Vicksburg finally fell due to the siege by Grant's forces which had weakened Pemberton's position to one of desperation and futility. Wellington's victory at Waterloo was less a decisive battle than the

culmination of a process in which contending nations had long lurched toward a state of exhaustion, a state into which France had plunged further than her rivals.¹² The author recognizes those battles in which the decisive action occurred from the initial disposition of forces, and where the effects of that initial action had a near immediate, positive effect on the victor's strategic aims. Austerlitz and Jena-Auerstädt serve as long-standing examples of the possibilities for attaining such results.

CHAPTER 1 -- THE RISE AND FALL OF DECISIVE BATTLE

Patterns of warfare over the centuries have alternated between periods of apparent decisive victories on the one hand and long, protracted, attritionist affairs on the other. For instance, Athenian military ascendancy over Persia at Marathon (490 B.C.) waned indecisive against Sparta in the Peloponnesian War (431-404 B.C.). Bonaparte's superiority in method against the Russians and Austrians at Austerlitz (1805) and against the Prussians at Jena in 1806, proved inferior against Wellington in Spain (1813).

Dr. Robert M. Epstein explains that the relationship between the two patterns of warfare was most often determined by the symmetrical or asymmetrical relationship that existed between the opposing military forces.¹³ In his analysis, decisive battle occurred most often when the two opposing forces brought asymmetrical capabilities to the field of battle. Wars of protraction and attrition were most often the result of armed conflict between armies of similar organization and warfighting capabilities. Russell F. Weigley supports these observations in his introduction to *The Age of Battles*. He offers that prolonged indecision (protracted attrition) was the dominant form of warfare whenever infantry predominated as the means of waging war: "Wars fought predominately by infantry tend to be cursed even more...by the plague of indecision than do other wars."¹⁴

Weigley concluded that decisive battle required an asymmetrical advantage in mobility, shock and pursuit capabilities.¹⁵ Asymmetrical capabilities provided commanders with the ability to effectively destroy an enemy's main force, the crowning objective in wars that focused on a strategy of annihilation and the decisive battle. History suggests that decisive battle requires more than shock effect. While important to disrupting an opponent's center of gravity, it seems more important to establish superior concentration of effects at a decisive point, and to then sustain a continuous pressure from the initial action through the final defeat of an opponent's ability to resist.

Infantry domination is not in itself the root of indecision. Nor is the lack of a mobile shock arm a precursor to defeat. Instead, it is the symmetry in method, systems and organization which denies the attainment of a significant advantage by either adversary.

Where symmetry in method, systems and organization exists the opportunity for decisive battle is lost; only attrition or negotiation can settle the military contest.

Method refers to the military doctrine and techniques employed to secure strategic objectives through the conduct of war. Systems refers to the technology and hardware employed by a military force to support its ability to doctrinally see, shoot, move and communicate. Organization refers the way a military force is organized to exploit its available systems and selected warfighting methods. Organization includes command relationships and the demographics of the force.

History demonstrates that the quest for decision through battle exists as an ever recurring cycle. As expressed by Weigley and Epstein, warfare prior to the twentieth century tended to gravitate toward a state of symmetry. Advantages achieved by one nation were quickly adopted by adversaries, which led to protracted indecision at their next meeting of arms. Consequently, leaders sought to break this symmetrical relationship by creating advantages in warfighting method, systems or organization until they were capable of achieving the political decision through battle. This would then prompt the cycle to begin anew.

Understanding Hans Delbrück's categorization of warfighting strategies is important to understanding warfighting symmetry. However, it is critical to understand that Delbrück was not describing military strategy as the U.S. military describes it today.¹⁶ Instead, his strategies actually described operational techniques employed by military forces to attain a strategic object. For Delbrück, all military strategy could be divided into two basic forms, *Niederwerfungsstrategie* (the strategy of annihilation) or *Ermattungsstrategie* (the strategy of exhaustion).¹⁷

Niederwerfungsstrategie sought the decisive battle as its sole aim. A commanding general was called upon only to provide an estimate regarding the feasibility of employing *Niederwerfungsstrategie* in a given situation. The strategy of annihilation was resource dependent and linked directly to the political objectives of the contest. *Ermattungsstrategie* did not recognize battle as its sole aim. Instead, battle was "merely one of several equally effective means of attaining the political ends of the war."¹⁸ *Ermattungsstrategie* recognized battle and maneuver as its two principle components, a "two pole strategy". Sounding much like the herald to the concept of operational art, *Ermattungsstrategie* required the responsible commander to determine when to fight and when to maneuver, when to mass and when to economize.

An asymmetrical relationship exists between these two warfighting methods at the operational level. Despite the reasons for a commander's adoption of either, history indicates that the selected method may constitute an asymmetrical advantage in the military

contest, regardless of superior systems or organization. While this asymmetry is not a predictor of success or failure in military contests, history does suggest that decisive battle requires an opponent who seeks to employ a similar method.¹⁹ For instance, a commander which employs *Niederwerfungsstrategie* can only achieve his object against an opponent which employs a similar method. Examples of this phenomena are Bonaparte's successes from 1805 through 1807. In these battles a near-symmetry in method existed, but the *Grande Armée* was distinctly superior in its application. Operation Desert Storm (1991) provides a more contemporary example in which the Iraqi army proclaimed their desire to defeat coalition forces in "the mother of all battles", but were denied that opportunity by superior application of similar methods.

An army which employs *Niederwerfungsstrategie* may be denied its quick rewards by an opponent who can successfully employ *Ermattungsstrategie*. Russian failures in the Caucasus from 1832 to 1845 reveal a distinct asymmetry in method which provided the Caucasian mountaineers an initial advantage against Russia intentions. Russian methods sought to bring the whole of the mountaineers to a decisive engagement. By avoiding the single large-scale battle, the mountaineers denied the Russian army a quick decision and forced them to adopt new methods to obtain their desired political objects.

To understand the impact of symmetry on decisive battle, an examination of warfare in western Europe from the sixteenth century through the early part of the twentieth century is essential. This epoch witnessed the evolutionary processes from the *ancien regime* through the dawn of modern warfare wherein the quest for decisive battle reigned supreme. Nations fielded massed armies, improved systems and oriented on positive strategic aims. All came to believe "that the short decisive victory was an attainable goal"²⁰ until increasing symmetry in method, systems and organization caused warfare to grind to its logical conclusion in the protracted stalemate of the Somme, thus giving rise to the notion of the expiration of decisive battle.

THE ORIGINS OF INDECISION

Before 1560, warfare in western and central Europe had become increasingly static and indecisive. The lethal combinations of missile and maneuver, demonstrated most effectively at Agincourt in October 1415, had given way to massed formations of musket and pike.²¹ Cavalry charges against rigid infantry formations no longer produced the shock effect necessary to unhinge an opponent's position. Furthermore, the density in manpower of these compact infantry formations inhibited their own maneuverability and thus impacted negatively on battlefield mobility.

Increased logistical requirements added to the sluggishness of battle. Armies depended increasingly upon fixed magazines for supply as few areas could sustain the increasingly larger armies for extended periods. Magazines, usually located within multi-bastioned fortresses, could no longer be quickly reduced by artillery like their medieval predecessors. While providing both protection and sustainment for their armies, these fortresses enabled the ascendancy of the defense as the stronger form of war and further reduced the decisive role of the heavily armored knight in combat. Resilient against bombardment and assault, these bastions were formally besieged. Consequently, the "art of war" focused heavily on fortress design and siegecraft. Warfare shifted increasingly toward immobility and prolonged indecision.

Adding to this indecisiveness was the demographic make-up of most armies from the sixteenth century until the French Revolution. Because it was not possible to demand perpetual service from the citizens who provided through their enterprise the economic well-being of the society, the employment of mercenary forces became the primary means for making war.²²

"Since the fourteenth century, soldiering had become a profession of its own, entirely separated from any other civilian activity."²³ Italy had become the favorite career location for soldiers of fortune seeking payment for their warfighting services. Prominent among these fortune seekers were the *condottieri*, organized companies of mercenaries who provided their services to the highest bidding Italian states and who, in one season might sell their services to one state, and to its rival the next.

Competent enough in combat, these professional soldiers were also considered unreliable, prone to mutiny, desertion or defection, and, at times, more dangerous to their employer than to the enemy. The effects of such negative conditions on military operations were paralyzing to a sovereign seeking political decisions through battle. Unless payment and sustainment could be regularly provided, commanders ran the risk of rapid deterioration in fighting strength leaving them incapable of continuing their military enterprise.

THE QUEST FOR SOLUTIONS

In the latter parts of the fifteenth century, the Italian humanist, theorist and military intellectual Niccolò Machiavelli attempted a synthesis of the whole of military experience from antiquity to the developments of the late Middle Ages to devise a complete scheme for an army of his day. He regarded the role of force as paramount in domestic and foreign affairs and selected the citizen militias of the Greek city-state and Roman republic as his

model of the ideal army.²⁴ Machiavelli's concerns with Italian politico-military organizations can be attributed in large part to his dissatisfaction with the continuing indecision of limited wars between the Italian states and his dismay over the crippling defeat of Florence which, in 1494, had placed great dependence on the services of mercenary soldiers for security. "The present ruin of Italy is the result of nothing else than reliance upon mercenaries."²⁵

Machiavelli scorned the limited nature of Italian inter-state warfare, believing there could be no limitations in wars fought by states for their existence. He believed that the aim of war was to face an enemy in the field and to defeat him there.²⁶ Wars of decision depended entirely on the outcome of the decisive battle and therefore all other considerations should be subordinated to the attainment of battlefield victory. Wars required the rapid and economical attainment of a definite result: the complete defeat of the enemy through battle (a strategy of annihilation).

Machiavelli emphasized the qualities necessary for success in battle: courage, obedience, enthusiasm, and ferocity.²⁷ He believed such qualities and patriotic enthusiasm could only be attained by an army comprised of men fighting for their native land.²⁸ These qualities he found disgustingly lacking in the *condottieri* formations. He envisaged raising an army comprised of conscripted citizens using the model of the Roman legions as his inspiration. In them he saw the discipline, organization and military virtues necessary in an army capable of achieving battlefield decision.

A warfighting symmetry in method, systems and organization existed between the *condottieri*-dominated Italian armies. This symmetry deterred the ability to wage decisive battle. Machiavelli's reformative concepts for method and organization demonstrated his understanding of the need to break the symmetrical immobility and indecision associated with the large, dense infantry formations of his day. For him, infantry was the army's dominant force and all other systems mere auxiliaries.

Regarding the battle formation of the infantry...Machiavelli argued that, armed with sword and shield, and deployed in several flexible, manoeuvrable, and mutually supporting squares, it would throw into disintegration and slay at close quarters enemy infantry armed with the pike and deployed in fewer, larger, and less manoeuvrable squares.²⁹

Machiavelli did not appreciate the technological innovations of sixteenth-century warfare systems, however. Instead he believed the abilities of the commander and the courage of the individual infantry soldier to be of greater significance than any weapon on the battlefield. Machiavelli suggested that artillery's effects were of only psychological value and capable of limited physical effect.³⁰ He had failed to recognize the eventual

importance of innovations in warfighting systems that were changing the nature of warfare and causing a decreasing depth in the battle formations. Azar Gat offers that Machiavelli's acceptance of the innovations in firearms would have undermined his recommended model for military organization--the Roman legion.³¹

What Machiavelli did provide was a proposal for effective societal and military change. In an era when Italy had developed its military to fight very controlled and limited inter-state wars, he had proposed reform.³² He recognized the importance of the citizen army, even though he probably failed to appreciate the inherent power of nationalism as would rise with the armies of Napoleon. He identified the role of the decisive battle in war as the principle means for concluding political discourse. Clausewitz would later offer that the key to victory lay in the elimination of an enemy's ability to resist. Machiavelli reasoned that all activities in war required contribution to the military's success in the battle of decision. This required centralized planning under a unified command structure, and execution by a disciplined, hierarchically-organized military which embodied the warfighting qualities absent in armies of the *condottieri*.

Machiavelli's theories provided an intellectual foundation for military and political thought well after the sixteenth century. The concepts of citizen armies, hierarchical command structures, and functional military competence were critical to achieve the necessary political objects through battle. Such theories would later be resounded by Gustavus, Frederick the Great and Guibert. They would be realized and employed by Napoleon.

Machiavellian theory demonstrates a recognition of the reforms necessary to achieve advantage on the infantry-dominated battlefields of his day. The sixteenth century, however, remained plagued by the atrophy of the offensive. Four principle causes contributed to the petrification of decisiveness in sixteenth-century battle. First, the increasing size of infantry formations, most notably the Spanish *tercio*, resulted in massed armies numbering anywhere from 1500-3000 men strong. They were cumbersome, unwieldy, inefficient and better suited for defensive roles. Any offensive undertaking tended to degenerate into drawn out slaughters between two opposing formations joined together in a great chaotic tournament of close combat.

Second, cavalry had lost its shock effect in battle. Unwilling to charge into the *tercio's* bristling pikes, cavalry adopted the tactic of the *caracole*. In this benign maneuver, cavalymen would "trot in stately formation to within yards of the enemy, swerve right while discharging their right-hand pistols, swerve again...in order to fire their left-hand pistols, and then ride off to re-load."³³ Pistols of the day had an effective range equivalent to that of the pike and as such, the *caracole* had little effect.

Third, artillery had grown excessively heavy and required great effort to move it about the battlefield, thus contributing more to battlefield immobility. Fourth, the effects of artillery had thrown the "high-walled medieval castles into the dustbins of military antiquity."³⁴ Engineers responded with new, low-silhouetted fortifications resistant to the effects of cannon fire and which necessitated the application of formal, resource exhausting sieges.

These causes created a warfighting symmetry in method, systems and organization between adversaries and contributed to the inability of commanders to conduct warfare of the sort posited by Machiavelli. Battlefield mobility and decision required that an asymmetrical advantage be created to secure political aims through the application of force. Beginning in the seventeenth century, an earnest approach to the problems of battlefield indecision began. Reformations in warfighting would create the environment necessary for Bonaparte's successes in the early days of the nineteenth century.

REFORMS IN WARFARE

Gunther Rothenberg describes the seventeenth century as the era in which a complete and fundamental shift in the nature of armies and warfare occurred.³⁵ Weigley identifies the period beginning in 1631 and ending in 1815 at Waterloo as the age in which war revolved around large scale battles. In that age, more than at any time before, the economic, social, and technological circumstances of war permitted the massing of tens of thousands of soldiers on a single battlefield where strategists hoped to secure the objects for which nations went to war.³⁶

DUTCH REFORMS:

Orangist princes, during the struggle for Dutch independence from Spain (1566-1609), recognized that technological advances in firearms necessitated a change from accepted standards of waging war. Despite attempts to do so, the new systems could not be effectively molded to fit established unit organizations. To obtain the greatest benefits from the tactical mix of musket and pike, armies required new methods and organization to optimize the effects of firepower and mobility.

Maurice of Nassau (1561-1625) embraced firepower as the potentially decisive element in warfare rather than the traditional shock effect of cavalry. Furthermore, the pike was to protect the musket, not the other way round.³⁷ The Dutch doctrinal employment differed from that of the Spanish *tercio* where, in theory, the effects of musket and

arquebus fire would prepare an enemy for the decisive “push of pike”. In reality, the ungainly *tercio* often precluded any attempts at decisive offensive action.

Maurice believed, as did Machiavelli, that well-articulated infantry, arranged in three lines and incorporating the concept of a reserve, provided the best means of defeating an opponent’s system of larger, less maneuverable blocks of men.³⁸ A more mobile force, able to deliver a higher volume of effective fire, could provide the decisive advantage necessary against a numerically superior opponent. In short, mobility and firepower could provide the shock effect necessary to defeat the *tercio*.

Maurice identified three key factors needed to achieve the asymmetrical warfighting advantage: “an efficient use of every man [unlike the wasted manpower in the inner depths of the *tercio*], flexibility [unlike the cumbersome Spanish formation], and a combination of arms.”³⁹ Maurice adopted elongated company formations of musketeers some 130 strong and six deep, with pike formations interposed to provide protection against cavalry charges; the musketeers would fire, countermarch and reload so that the front-most rank sustained continuous fire.⁴⁰

For battle, Maurice organized companies into battalions of approximately 500 men each. These smaller, more linear battalion formations were deployed in lines of companies three deep. The third line provided an established reserve to be employed as warranted by the tactical situation. In theory, such organization and method provided an asymmetrical advantage in flexibility and lower echelon initiative.

Maurice’s linear conduct of battle demanded procedures to control movement, fire and, above all, the individual soldier. Drill would enable the fire and movement necessary to optimize the shock effects of firepower. Discipline, something noticeably absent in the mercenary armies of the sixteenth century and within the formations of the *tercio*, would establish the necessary self-control in the individual soldier to more effectively coordinate the effects of musket and pike. Such reforms sought to establish an asymmetrical advantage in combat effectiveness over technologically similar, yet organizationally dissimilar, opponents.

Despite Maurice’s intentions, the scarcity of pitched battles in the Netherlands prevented a thorough test of Dutch reforms against the Spanish armies. On July 2, 1600, however, Maurice and his Dutch Army defeated a hastily mustered Spanish army near Nieupoort. This battle, while tactically decisive, did not secure the strategic aim of defeating the Spanish Army. It did, however, attract wide attention as a model for military reforms in both organization and method across Europe, and would serve as the foundation for an army whose organization and methods would shock the Holy Roman Empire. One of Maurice’s many understudies was a Swedish nobleman named Jakob de la Gardie, who

became the military instructor to a young Gustavus Adolphus, a man who later ascended the throne of Sweden in 1611.⁴¹

GUSTAVUS ADOLPHUS -- THE LEGIONS RETURN!

In the summer of 1630, the forces of Ferdinand II, the Holy Roman Emperor of the German Nation, were well on their way to re-establishing Catholic hegemony in central Europe. They employed massive, cumbersome infantry formations which aped the successful Spanish *tercio* of the sixteenth century and which contributed to a continuing lack of decision in war. For Protestants it was the low point of the Thirty Years War.

Then, out of Sweden burst an army the likes of which had never been seen before. At first the Swedes were only 13,000 strong, a ludicrously small force...Within two and a half years they had restored Protestantism to northern Germany, routed every force daring to oppose them in open battle, humbled the Emperor's best generals, marched to the Danube and beyond, and opened a new epoch in warfare.⁴²

Gustavus recognized that battles in Europe tended to avoid decision through the conduct of protracted, positional warfare between symmetrically organized, infantry-dominated armies. Such symmetry in method, systems and organization left neither opponent with a distinct, potentially decisive advantage, and so warfare tended to protract into long, bloody struggles.

Gustavus understood the impact that decisive battle could have on his primary object of expanding the power of his emerging nation-state without undermining that object by disastrously draining it of critical resources.⁴³ As such, he bore a determination to push war toward prompt, emphatic resolution. Military strategy would seek the rapid destruction of the enemy's army through decisive battle and thus efficaciously and economically secure the objects of policy through warfare.

Gustavus determined that Sweden's political objects abroad required that he wage decisive battle, that he attain his political objects swiftly and economically before Sweden's limited resources were played out.⁴⁴ He reasoned that the destruction of the Imperial Army was essential to his strategic goals of European hegemony.⁴⁵ Because the Holy Roman Empire's resources could easily outlast his own, he would need to inflict a swift and significant reduction in its fighting strength, both physically and psychologically. This analysis by Gustavus would establish the object for strategies of annihilation as other European nations began to adopt Gustavus' strategies. The swift reduction of the Imperial Army's fighting strength equated to the notion of defeating the enemy's principle means of resistance through battle in order to impose one's political will.

To achieve decision through battle, Gustavus had to create an asymmetrical advantage over his enemies within a framework of method, organization and systems employed. This advantage was enabled by the adoption and exploitation of social and military reformative concepts proposed, but not fully realized, by Machiavelli and Maurice.

But he did not stop with tactical reform alone. The best organization is no better than the worst unless comprised of men capable and willing to make it work. Pay the men promptly, he insisted. Recruit among Swedes insofar as possible; then hire only the best of mercenaries to fill up the ranks. Train troops diligently and educate officers thoroughly...And weld everything together with a disciplinary system which, though just, is hard and uncompromising. Gustavus'...reforms...contributed to the creation of an army which had no peer.⁴⁶

Gustavus effectively turned a publicly accepted notion of obligatory military service into a long-serving force. This enabled Gustavus to retain an effective, disciplined form of military organization which he transformed into a long-serving force of patriots, something Machiavelli had earlier determined as critical to warfare. But Sweden could not readily afford to financially support these patriots for campaigns abroad. Gustavus soon turned to employing local mercenaries within his regular formations for expedition warfare while retaining the bulk of his regular troops for garrison duties at home. All were trained in the Swedish system of war, the effectiveness of which was revealed in 1631 at the battle of Breitenfeld where the forces of Habsburg suffered a cataclysmic defeat and where the pattern of power in Europe was transformed.⁴⁷

Gustavus reckoned that the key to decisive warfare lay in the mobility, shock and firepower of an army. He disdained the large and inflexible phalanxes of the *tercio* and created an army based on smaller, more mobile units capable of great lethality. Gustavus split his forces into "divisions" (more properly battalions or battle-groups) of four to five hundred men to provide the necessary freedom of maneuver at the lowest echelons.⁴⁸

He maximized the ability to deliver tremendous volleys of fire during battle to prepare the way for offensive maneuver. The organization of infantry followed Maurice's basic design, but increased the number of musketeers while reducing the number of pikes. Instead of firing and withdrawing to reload by ranks, Gustavus' infantry was arrayed in three ranks which fired together delivering a devastating volley fire which prepared the way for an offensive punch from a "push of pike" into the opponents' formations.⁴⁹

Gustavus revitalized the decisive role of cavalry on the battlefield, relying upon it to strike the climactic blow in his battles of annihilation.⁵⁰ Instead of employing the ineffective *caracole* of other European cavalries, the Swedish cavalry learned to charge as a

disciplined mass with sabers drawn, a mobile instrument of terrifying physical and psychological shock.⁵¹ Cavalry pistols would only be used at very close quarters.

Gustavus modified and simplified the arm of artillery by adopting three standard guns and reducing their weights to provide them greater mobility to support his mobile formations. Advances in artillery construction and ammunition enabled a greater ease of handling and increased the effective rate of cannon fire to one higher than that of his infantry and, more importantly, that of his adversaries.⁵² He increased the number of artillery pieces within his units which, greatly increased the firepower potential of each formation.

In short, Gustavus' reforms focused on mobility, firepower and shock. His most important advance toward an asymmetrical advantage was perhaps the method of coordinated employment of the different arms on the battlefield. His organization followed the premise of Maurice, incorporating both a mounted and foot reserve to be employed as necessary. Gustavus' methods were effective but complicated, even for a commander who had instilled in his army an offensive spirit and a "sense that there was nothing it could not do."⁵³ The vulnerability of the linear formation and the pains required to arrange formations during battle, stressed the command and control capabilities of the Swedish King. It required clear vision, the ability to grasp the situation, and an integrated structure of control supported by instantaneous, disciplined response. When Gustavus was able to achieve these conditions he realized that "it was now possible for armies...to be the instruments of a single controlling will."⁵⁴

Gustavus' advances in military organization, method and systems were justified at Breitenfeld in September 1631 where he defeated the Imperial general Tilley. The coordinated employment of a combined arms reserve against Tilley's forces, after they had routed Gustavus' Saxons on the Swedish left, demonstrated how the Swedish Army was able to develop and employ an effective asymmetrical advantage in flexibility, firepower, maneuver and shock against the inferior methods and organization of Tilley's *tercios*. However, this was not the decisive battle Gustavus so eagerly sought. He defeated Tilley, but not the Imperial Army. Tilley withdrew and was able to regroup. Gustavus failed to pursue and complete the destruction of the enemy army, something he had reasoned as essential to achieving decision through war.⁵⁵

The Thirty Years War had begun as a traditional slugging match between symmetrically organized and employed armies; it ended with every general doing his best to copy the Swedes' methods. Gustavus failed in his attempts to attain the decisive battle he so desperately sought. He did, however, provide a blueprint for the organization, method

and systems required to achieve the asymmetrical advantages necessary for achieving decision through war:

Gustavus provided...an indication--it would be unwise to put it any more strongly than that--of the way in which the inconclusive and generalized violence into which warfare and degenerated, and into which its tendency is always to degenerate, might be got under control; how the violent element which permeated European society could be canalized and put to the purposeful, legitimized uses of the...state.⁵⁶

We can derive from Gustavus' contributions to the evolution of war that decision in battle requires the creation and effective employment of an asymmetrical advantage. Such an advantage can only be determined by a complete understanding of one's adversary; his methods, organization and systems. Furthermore, such an advantage must be employed so that its effects are sustained until the object of the contest is secured. Had Gustavus completed the destruction of Tilley's forces through an effective employment of his more mobile and lethal forces in a coordinated pursuit, Breitenfeld may have secured Swedish dominance in Europe.

THE EIGHTEENTH CENTURY--THE AGE OF REASON:

Prior to the Napoleonic Wars, Europe had witnessed a return to wars of limited decisive value. Armies had adopted the practices of Gustavus, but the realities of the Thirty Years War had convinced nations that war had become a potentially wasteful enterprise for securing the political aims of the state.

In the age of reason, the essence of good generalship was not to force battle, but to destroy an opponent's lines of supply. "The aim of the general was not necessarily to bring his enemy to battle, but to make his position so untenable that he would be compelled to fight at a pronounced disadvantage or else concede defeat."⁵⁷ Battle was regarded as a last resort to be accepted only under favorable conditions.

The armies of Europe had aped the Swedish system. As such, a certain symmetry arose that forced war toward a state of prolonged indecision. Campaigns could be conducted through an entire season without an army ever fighting a major battle. The cost of raising and maintaining professional armies, and the casualties suffered by the mutual exchange of close volley fire and bayonet charges, made combat a great economic risk. Without a nation at arms, armies lacked the ability to regenerate losses except at great expense. War became an exercise in movement for positional advantage.

The huge frontages of the linear formations required a broad and reasonably level plain.⁵⁸ As such, the initial deployment into battle array upon favorable ground was

paramount. "If caught in a poor position, as at Rossbach and Leutzen where the Prussians were deployed against an enemy flank...it usually meant irreversible defeat."⁵⁹ Linear formations required a great degree of precision in both control and movement.

Given the time and effort required to deploy, battle was normally attained only by the mutual consent of two opposing commanders. Engagement could be refused by simply withdrawing from the field. When battle was given, it was seldom decisive as the line could not easily transition to an effective pursuit, something Gustavus had learned earlier. This symmetry in method, systems and organization caused warfare to wane towards a condition of indecisiveness again.

The immediate means to achieve advantage and decision in battle then lay in the methods used to deploy an army into the required battle array. The quicker one could move and form his army, the greater the likelihood of catching an opponent unprepared. This formed the foundation of Prussian military thinking in the 1730s and focused Prussian military training after 1740 under the eyes of Frederick the Great.

FREDERICK THE GREAT:

The key to Frederick's battlefield successes was the "oblique order," a method of envelopment which sought to create local superiority against an enemy flank during the opening movements of battle. The object of the oblique order was to create a superior concentration of force against an enemy weakness, something Jomini would later hail as a principle of war. Movements to obtain the "oblique order" required extensive coordination which could only be achieved by soldiers who were rigorously trained, controlled and capable of a disciplined response.

Frederick's principle aim was to turn his army of lower-class, conscripted soldiers into a highly mobile and lethal extension of his mind and will. If he could achieve the singleness of mind in execution, it would free him to more effectively employ the art of generalship, devise strategies and order movements with the assurance that they would be executed. His greatest contributions to this effort were his soldiers' disciplined response to orders which enabled a rapid concentration of firepower necessary, and his establishment of a highly mobile horse artillery whose mobility "was not so much to support the cavalry as to enable (it) to move rapidly to the decisive point."⁶⁰

Despite Frederick's advances toward an asymmetrical advantage, he was unable to attain the decisive victories he sought (with the exception perhaps of Silesia which he quickly seized in 1740). Frederick's infantry had dominated in the battles of the War of Austrian Succession due to its superior organization and methods, particularly its superior

rate of fire and ability to retain cohesion under pressure.⁶¹ By the time of the Seven Years War the Austrians had created a near symmetry in infantry organization and method which all but eliminated Prussia's ascendancy. Frederick was thereafter resigned to take the offensive for strategically defensive purposes. The attainment of further positive objects through offensive actions was no longer possible.

Organization and methods gained Frederick only temporary advantages during his time. He was unable to deliver a decisive blow to the whole of his enemy's formation who threatened nearly simultaneously from various points around the Prussian periphery. But Frederick's methods were to influence a young French theorist and nobleman, the Count de Guibert. Guibert would profoundly influence the methods and organization of Napoleon's armies in the nineteenth-century when the decisive battle would be realized on the European continent.

NAPOLÉON--DECISIVE BATTLE ATTAINED:

The advances in warfighting organization and method employed by Napoleon Bonaparte (1769-1821) produced battles recognized as decisive, if only in the short term, at Marengo, Austerlitz and Jena-Auerstädt. Bonaparte would exploit certain asymmetrical advantages, gained by the great mobility and organization of his army, to achieve surprise and superior concentration at battlefield decisive points.

Dr. Robert Epstein explains that Napoleon's ability to bring his modern nineteenth-century force to bear against opponents who retained the archaic methods, systems and organizations of the *ancien régime* was critical to his success. Napoleonic warfare would establish a classical paradigm for waging decisive battle which would affect military thinking long after the battle of Waterloo.

Perhaps the best illustration of Napoleonic asymmetry can be summed up by Epstein's description of the first of what he identifies as two distinct periods of war in the nineteenth century. The period from 1805-1807 witnessed the rise of the *Grande Armée*, a warfighting organism of superior organization and method on the European continent. Much of the asymmetrical advantage gained by Napoleon was due to his effective employment of concepts already in place within the French Army when he assumed its control.

Prior to the French Revolution, the Marshal de Broglie developed the principle of dispersion for use in the French army. This enabled units to remain within supporting distance while in camp and on the march. Broglie had noted that armies tended to fight as massed formations. Even armies which employed smaller organizations did not, for the

most part, have the capacity for independent movement and action away from the main body. Broglie's theories envisaged the French Army organized into permanent formations. But, until Guibert formalized Broglie's concepts, armies marched as Frederick's did: in the order in which they were to occupy the battlefield.

Guibert undertook a study to examine the indecisiveness of eighteenth-century warfare and concluded that a strategy dependent on fixed fortifications, the "spell of Vauban", was generally undesirable for French intentions. Strategic, mobile infantry firepower was the key to battlefield decisiveness.⁶² He sought to return mobility to the battlefield, believing that a sufficiently mobile infantry could bypass fixed fortifications and nullify their value by severing their lines of communications.

Guibert recognized that mobility required a variation in organization and method and so devised the division system. Wide dispersal would confuse the enemy as to the location of the French main effort while providing the French commander the flexibility to concentrate force where it was needed to strike the decisive blow.

By marching in divisions, an army could increase the number of roads it used and the breadth of the front it presented to the enemy, accelerating its pace of advance yet reducing its logistical difficulties. Because the division was a lasting, cohesive entity--including all the combat arms in appropriate proportions--a single division meeting the enemy had the ability to give battle...until it was reinforced by other divisions. One or a few divisions might (fix) an enemy army while others maneuvered against its flanks, rear, or line of communications. Subordinate general officers leading divisions could relieve some of the burden of command and control resting with the commander in chief.⁶³

The further development of artillery provided the French with a system superior to those of her European adversaries. After 1763 the French Inspector General Gribeauval reduced the weight of artillery so that it could maneuver with infantry.⁶⁴ The French theorist and artillerist, Chevalier Jean du Teil, advanced Gribeauval's concept to support Guibert's ideas regarding artillery's mobility. He established a light horse-drawn cannon to move with the troops, enabling a concentration of combat power against an enemy's weak point.⁶⁵

French military leaders recognized, as did Frederick, that an army which could deploy quickly had an opportunity to unbalance a slower opponent. The French infantry increased the rate of march to complement their new found flexibility. "To French reformers, rapidity of movement seemed...the most likely means of breaking the deadlock between cohesive but slow and inflexible infantry forces."⁶⁶ This mobility of forces provided the French Army with the ability to achieve shock action through the employment of infantry and artillery. Napoleon also had the advantage of a citizen army capable of

bringing a national fervor and the qualities of courage, obedience, enthusiasm, and ferocity to the warfighting equation, something desired by Machiavelli centuries earlier.

These organizations, methods and systems enabled Napoleon to wage wars of annihilation. His army could advance toward his intended battle on a wide front, slowly contract as it neared its assembly point and then achieve the concentration of force necessary to overwhelm his opponent at a decisive point. Schneider fittingly describes the Napoleonic method as concentric maneuver and concentrated battle.⁶⁷

Epstein argues that Napoleon's decisive victories at Austerlitz (1805), Jena (1806), and Freidland (1807) were made possible because the French were able to bring a modern nineteenth-century army against archaic methods and organizations of the *ancien régime*.⁶⁸ The dispersed advance toward Ulm, and the rapid concentration of forces to overwhelm Mack's defenses followed by a rapid dispersion and concentration at Austerlitz, demonstrate the ascendancy of the Napoleonic method and organization. Certainly such flexibility, combined with coherent subordinate organizations, enabled the effective employment of Soult's corps to strike the decisive blow against the allied center at Austerlitz. The effects of this concentrated attack broke the allied center and created a rapid degeneration of the allies' ability to continue further resistance. The Austrians sued for peace within twenty-four hours after the battle of Austerlitz.⁶⁹

In 1806, Napoleon fought the Prussians at Jena and Auerstädt. Again, French primacy in organization, method and systems provided the necessary asymmetrical advantage to defeat the antiquated Prussian Army. Napoleon made the most of this advantage by employing a turning movement to place his army on the Prussian eastern flank and rear. He then promptly attacked. He followed up his immediate success with a relentless and devastating pursuit that ended with French control of most of the Prussian territories. After this spectacular victory, Napoleon was convinced that he could achieve similar results against any enemy that could be brought to battle.

It was clear that "an unthinking attachment to eighteenth-century stereotypes in the face of Napoleonic methods was disastrous".⁷⁰ The Prussian disaster at Jena prompted the Military Reorganization Commission to remodel the Prussian Army, not to imitate completely the French military organization and tactics, but to establish the conditions for military and social reforms within Prussia itself. Prussia recognized the decisive advantage of a citizen army could bring to the battlefield. Having witnessed defeat at the hands of Napoleon, other nations took up the charter of modernizing their armies to meet the French threat.

Napoleon would find that his methods could only gain decisions in wars against lesser opponents who provided him the opportunity to wage decisive battle. In 1812,

Napoleon invaded Russia to find a similarly organized Russian Army which refused to offer the opportunity to exact decision through battle. Seeking another Austerlitz (the single, decisive battle), Napoleon outdistanced his supplies and was drawn deep into the Russian homeland to Borodino. There he met a similarly organized and equipped Russian force. There were no brilliant maneuvers; the battle was dominated by the attrition of cannon fire and the inability to wield a decisive shocking blow by either side.

The main element of operational maneuver had become the army. Victory would now require the destruction of an entire army as opposed to a corps, an extremely difficult requirement given the size of armies, the resiliency provided by the corps structure, and the great volume of firepower generated by their cannons. The result of these changes was that battle again shifted toward protracted indecision.⁷¹

In 1815, Napoleon suffered his final defeat at Waterloo. This came at the hands of the allied army which primarily employed eighteenth-century methods and organization. Wellington's eighteenth-century army withstood the murderous French assaults until the timely arrival of Marshall Blücher's modernized Prussian cavalry on the French right. Blücher was able to deliver a shocking blow against Napoleon's flank, and followed that with an effective pursuit. Prussian changes in organization and method had provided the advantage of a necessary shock effect at a decisive point which unbalanced the French formations.

Changes had occurred within Napoleon's army as well: the quality of French conscripts had lessened while the size of armies had increased. Napoleon's allies could regenerate their armies from their own resources, providing a degree of resilience which the French Emperor no longer enjoyed; they could more easily partake in a war of attrition. Napoleon could no longer optimize the use of his once-superior methods and systems against the rigid, uncompromising British formations due to a decline in the quality of his organization. He lacked the ability to employ his once-superior methods with the same expected degree of decisiveness. His adversaries had learned and adapted. Their adaptation of French method, organization and systems provided them the advantage necessary for final victory over the resource-weakened French Army.

MOLTKE AND BEYOND:

The battle at Königgrätz against the Austrians in 1866 had demonstrated the ability of the Prussians to employ Napoleonic methods on a grand scale. While one army fixed the Austrians, the other moved against its flank. But the Austrians, with a well-articulated army of veterans, withdrew in good order.⁷² Napoleonic warfare had demonstrated that

decisive victory lay in the ability to effectively envelop an enemy force and strike a decisive blow which would create a destabilizing effect on the enemy's ability to resist, followed by a relentless pursuit to complete the destruction of the enemy. The Prussians had failed in this last requirement. Nonetheless, they had effectively demonstrated their ascendancy over the Austrian's ability to wage war; the effects of this initial action prompted the Austrians to accept Prussian political concessions, thus making the battle of Königgrätz decisive.

Prussian actions demonstrate the effects that systems advances had on the conduct of war. Systems such as breach loading rifles, railroads, and the Morse telegraph enabled enhanced employment of Napoleonic methods and organization. An army's actions could now be coordinated over two hundred miles of front, just as Napoleon had done at Jena-Auerstädt with his forces contained within an area of 30 miles.⁷³ Numerous problems with these systemic and organizational advancements during the Franco-Prussian War of 1870 generated the idea that changes were required to the accepted warfighting methods.

Military leaders had long understood that decisiveness in war required the ability to achieve devastating shock against an opponent's principle force. This was achieved through many manifestations in the method and organization of warfighting. It was necessitated primarily by the limited range and lethality of available systems. The key to achieving shock lay in the ability to effectively achieve the maximum concentration of superior force against an enemy weak point. This concentration was achieved by Napoleon and von Moltke by massing as many men as possible in as small a space as possible, and then driving that mass against their adversary's forces. Moltke realized the decisive value of the flank attack at Königgrätz. Shock was achieved through the use of mobile horse artillery massed against an enemy flank to breach enemy defensive formations and provide a conduit through which cavalry and infantry could assault.

A growth in military organizations necessitated changes in method. Napoleon's army marched as dispersed corps to reduce logistical requirements and provide greater flexibility upon meeting the enemy force. The increased size of post-Napoleonic armies required dispersed movements as a matter of necessity. Concentrated armies overcrowded available road networks and complicated coordinated action.

Other changes occurred which added to the apparent inability to wage decisive battle in modern war. Advances in military organization and warfighting systems had a dispersive effect upon the battlefield's components. Larger armies created increased frontages and depths to formations. Increased weapons ranges and lethality caused combat forces to disperse. Dr. James Schneider offers "The Theory of the Empty Battlefield" as an explanation for the indecisiveness in war that followed the French defeat at Waterloo.

Schneider's conclusion is that the effects of modern systems tended to create a great dispersion of troops on the battlefield.⁷⁴

The effects of increased ranges and lethality required changes in both the warfighting method and organization associated with massed formations. System advances provided an opportunity for greater battlefield lethality. Changes in method provided greater protection. Smokeless powder and breach-loading rifles of longer range enabled men to fire from the prone position and from a greater distance. This provided the defender an increased advantage over an attacker who had to advance across open terrain. Security for the attacker was afforded by greater dispersion also. Leaders could protect the fighting capabilities of their forces while not decreasing their aggregate firepower.⁷⁵

With the dispersion of forces came a commensurate expansion of the battlefield which tended to deny the possibility of achieving a superior concentration of force at the point of decision. The battlefield dynamic was evolving due to the changes in organization, method and systems.

"Changed...realities, the problems of controlling armies larger than had ever been seen before, fighting on frontages that had previously been inconceivable, with weapons that delivered firepower of quantity and quality that challenged all previous concepts of battlefield maneuver...called for a major rethinking of how wars were to be fought."⁷⁶

From these realizations came a school of thought proposed by Count Alfred von Schlieffen who recognized war as a science and, who concluded, that ample planning could effectively forecast the events of a campaign with a degree of mathematical certainty. This gave rise to the notion of a time-table war in which France could be defeated in precisely forty-two days employing the Napoleonic method of the central position followed by a great envelopment from the north. Such was the German Army's method in 1914.

While the Schlieffen plan did not envision the immediate destruction of the allied forces, it did intend to develop such great shock effect that the result would find the mass of the French Army pinned against the Alps. But the German army's failure was its inability to recognize the strategic mobility that France's railways would provide Joffre in countering the German drive. The ability to respond on interior lines enabled Joffre to create the conditions that would halt the German sweep and create the great impasse of the Marne until advances in warfighting systems and methods restored battlefield mobility in 1918 at Amiens.

Mikhail Tukhachevskiy noted that the German Army did not achieve the concentration at the point of decision in 1914. He saw that the great Schlieffen-planned sweep through neutral territory and into France retained its original frontage distances from

the point of deployment to the meeting of the allied forces. The conditions of the modern battlefield denied the ability to achieve decision without forces echeloned in depth. Tukhachevskiy believed that the conditions of war, with its million man armies, weaponry, infrastructure and the vast size of the battlefield, made it impossible to wage the single decisive battle:

It should be borne in mind that under contemporary conditions of waging war it may not be possible to destroy the enemy in a single operation. Hence it will be necessary to conduct operations, one after the other, until the enemy is destroyed, even if it is at his last line of resistance. We must perfect ourselves in this art of conducting operations, continuously practice and learn the process of conducting them sequentially...It should be remembered that the art of destroying enemy armed forces is the basic condition in an economical and successful pursuit of the war.⁷⁷

Tukhachevskiy recognized that the Napoleonic paradigm of dispersed, unopposed movement to the point of concentration was invalid. The German advance did not go unopposed, but met with resistance along its entire front as it advanced towards France. Thus Germany could not generate the sustained shock action necessary to unbalance the French ability to resist. Tukhachevskiy offered that the remedy to war's established conditions was to attack along a broad front with the ability to decisively defeat a defender's main force before his deep reserves could be organized. He did not believe the attainment of a flank was likely given the dispersed nature of war. Instead, he envisaged a broad frontal advance, to achieve an initial shock of overwhelming destruction of the majority of the enemy forces in the initial action. "An overwhelming battering ram force should be created."⁷⁸ That initial action would establish the attacker as the "master of the situation but on condition that he...deny the enemy freedom of action by virtue of contin[uing the] pursuit and...through unabated pressure..achieve the total destruction of [the enemy's] forces."⁷⁹

Tukhachevskiy posited that victory in modern war required successive operations which focused on the immediate destruction of the enemy's forward-most units. Initial victory would be followed by operations designed to destroy remaining enemy units deeper within the enemy's territory through a system of relentless pursuit and envelopment. The initial actions would have to conclude prior to the enemy's employment of an effective reserve. Such methods required a temporal assessment of the effects to be achieved at the outset of the operation, to ensure that adequate force was applied in time to counter any application of enemy reserves to the fight. The initial plans accounted for forward enemy dispositions, the force and time required to destroy them, and the time required by the enemy to effectively organize, and bring into action, a coordinated reserve effort.

In 1927, Svechin remarked on the inability of the Schlieffen plan to achieve decisive victory. He posited that destruction-oriented offensive strategies consisted of a series of successive operations that are so closely interlinked that they combine into one gigantic operation.⁸⁰ The goals achieved in earlier operations would establish the conditions necessary for subsequent operations. Svechin also noted that a strategy of destruction is achieved only by an unwavering thrust at a decisive point which seeks to unbalance the enemy's ability to resist the application of force. "A destructive offensive must aim at the complete disorganization of the enemy's manpower and its complete destruction, splitting every link between its intact fragments and capturing the communications that are the most important...rather than the country as a whole."⁸¹ Svechin believed the key to destruction strategy was the dominance of time, space and strength. To wrest control of time and space from the enemy, while concentrating superior force at the decisive point, was critical to such a strategy. This would have to occur in each successive operation so that superiority was retained throughout the course of the operation.

Svechin, like Clausewitz, proposed the inability of achieving the necessary political objective of a war via a single decisive battle.⁸² The nature of massed citizen armies and battlefield expansion represented a dimensional change in the condition of modern war which required the adoption of new methods for waging war. Svechin posited that decision was only possible through the conduct of successive operations, based on a strategy of destruction, with each action linked in purpose to the higher political object. Svechin and Tukhachevskiy both denied the possibility of achieving a war's political object through the employment of methods which relied upon the success of a single, decisive battle. Given the symmetry of adversaries and the distributed nature of forces, they advocated methods which employed successive operations, each linked in purpose to the higher object. They did, however, identify a recurring necessity to achieve a paralyzing shock in the initial action of war, followed by successive operations to defeat the whole of the enemy's forces. Given the distributed nature of modern war, it seemed unlikely that decisive force could be brought against the whole of the enemy's army in a single action. It seemed as though the age of decisive battle had truly passed.

This chapter has addressed the evolution of military thinking from the time of Machiavelli to the analytical studies conducted following World War I. That period consisted of a continuous waxing and waning of theories regarding the viability of employing a strategy oriented on the decisive battle. Seen as the ultimate method of achieving political objects, the single, decisive battle may be regarded as the child of a historical period's battlefield conditions. Those conditions allowed the employment of

asymmetrically superior methods against the whole of the enemy's forces in battle which summarily defeated them in one swift, violent blow. Symmetry in method, systems and organization tended to deny the possibility of waging decisive battle. Asymmetrical advantages in method, organization or systems could prove decisive against inferior opponents who could be brought to battle. A superior method, however, seems to negate advantages gained by any symmetry or asymmetry that might exist between adversaries in either systems and/or organization.

Applications of this theory of symmetry and decisiveness may be applied to analyze events in modern warfare as well. The eight year debacle of the Iran-Iraq War saw both sides unable to gain a quick decision from the outset of hostilities due to a symmetrical relationship in method, organization and systems. The lack of a superior operational method, on either side, created a war of grinding indecision. "Neither side developed a consistent capability to carry out combined-arms operations effectively."⁸³ Mao's method of protracted warfare denied Chiang Kai-shek and his Nationalists the ability to bring the mass of the Red Army to battle. The asymmetry in methods, between the Chinese Communists and the Chinese Nationalists, supported Clausewitz's theory that, "there can be no engagement unless both sides are willing."⁸⁴ The NATO strategy of the Cold War was obviously a result of the recognized asymmetry in organization (mass) available to the Soviet forces. It therefore reflected a follow-on forces attack strategy which relied upon a defensive strategy of exhaustion in the initial phases of a war with the Soviet Union, followed by coordinated AIRLAND BATTLE to restore the integrity of western Europe. The 1991 Gulf War demonstrated the asymmetrical advantages in method and systems employed by coalition forces against Iran who had, seven months earlier, successfully waged a battle of limited decisive value against the asymmetrically inferior Kuwaiti Defense Forces.

The implied temporal constraint on today's operational planners, in any regional conflict, requires achievement of national objectives rapidly to ensure our nation's continued ability to project lethal force worldwide.⁸⁵ Seemingly asymmetrical advantages in systems and organization may not provide the necessary supremacy. They may be negated by the application of methods which deny the possibility of bringing those advantages against the whole of an enemy's ability to resist.

It is the author's opinion that contemporary decisive battle requires warfighting methods which achieve a near-immediate and devastating blow to the whole of an enemy's ability to effectively resist. That blow is achieved through the effective application of aggregate advantages in warfighting systems and organization. The focus of the opening blow must consider the requirements of achieving an initial, paralyzing shock effect against

a dispersed enemy on a widely distributed battlefield. It must be followed, if necessary, by a relentless application of pressure to complete the enemy's defeat.

CHAPTER 2--DEFINING DECISIVE BATTLE

A strategy which employs decisive battle as a means is actually a manifestation of a strategy of annihilation. It seeks the destruction of an opponent's ability to effectively resist the imposition of will. Clausewitz argued that the overriding principle of war was the destruction of the enemy's forces. He regarded great battles, one's which the author describes as decisive, as concentrated war where all forces and circumstances of war are united and compressed into one major battle. The decision from that major battle settled the political conflict for which the war was fought.

Waging contemporary decisive battle requires methods which approach the Clausewitzian concept of concentrated war in the abstract, wherein the aggregate forces of opposing nations are ordered and assembled in such a manner that the course of an entire war is resolved in one tremendous burst of energy. Even Clausewitz recognized this as improbable; however, it serves as a mental construct for establishing a contemporary theory of decisive battle to meet strategic needs.⁸⁶

"In traditional Napoleonic-style [war]...armies were concentrated and maneuvered against each other to force convergence with the enemy at a single point--finite in time and space--for climactic battle."⁸⁷ The Napoleonic period provided a new model for waging war. It demonstrated that decisive battle was once again attainable, that a war's political object could be secured in a single battle. Two principle examiners of this military epoch were Antoine Henri Jomini and Carl von Clausewitz, the co-founders of modern military thought.⁸⁸ From Jomini and Clausewitz came the critical theories of decisive points and centers of gravity respectively, both of which are directly applicable to the conduct of decisive battle in Napoleonic and contemporary wars.

CONTEMPORARY WAR

"In war more than in any other subject we must begin by looking at the nature of the whole; for here more than elsewhere the part and the whole must always be thought of together."⁸⁹ War "is the impact of opposing forces...a clash between major interests which is resolved by bloodshed--that is the only way in which it differs from other conflicts."⁹⁰

War rises from unresolved political conflicts requiring the application of military force to produce a decision favorable to strategic aims. Peace is only relative, relative in

that it is an acceptable level of conflict that exists as the result of ongoing diplomatic, military, informational and economic interstate and intrastate relationships (FIGURE 1).

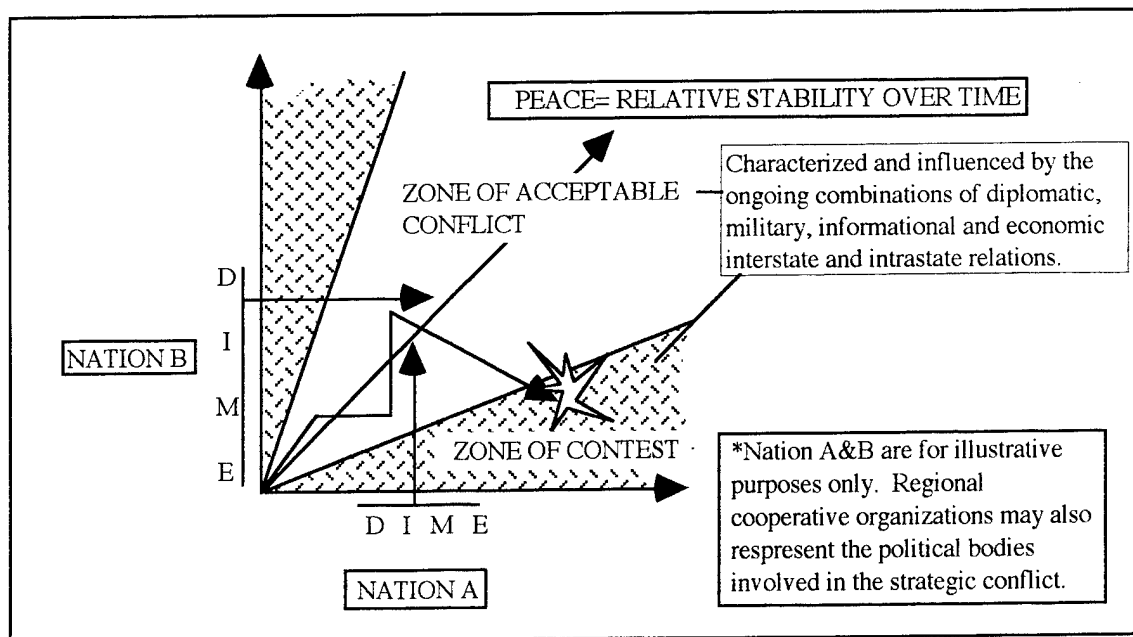


FIGURE 1: ZONES OF CONFLICT AND CONTEST

This acceptable level of conflict establishes an equilibrium in the strategic condition; a status quo. When the equilibrium in any of these relationships is disrupted by activities deemed unacceptable by other parties, the opportunity for solution by direct application of the military instrument of power arises.

Once the equilibrium of acceptable conflict is disrupted, the strategic relationship shifts to one involving military contest or war. "When other instruments of national power are unable or inappropriate to achieve national objectives...the US national leadership may decide to conduct large-scale...combat operations to achieve national objectives."⁹¹ The military contest is thus the "act of force to compel our enemy to do our will;" its results are either a retention or an adjustment of the strategic condition.⁹² The final result of the military contest is a return of relations to a state of acceptable conflict.

Clausewitz defines battle as "a struggle of the main force...waged with all available strength."⁹³ Similarly, Moltke posited that the enemy's will could be broken only through battle. The adoption of the military contest to resolve the political conflict establishes an opportunity for waging decisive battle, or concentrated war. Within the conditions of modern war, decisive battle requires the adoption and employment of methods which seek to reaggregate the distributed nature of opposing forces. Moreover, it demands the application of methods which achieve the necessary concentration of force against an

opponent's distributed ability to fight. Without such a method, one is consigned to employ successive operations to gain their desired object. While not an unacceptable strategy, the method of successive operations may prove undesirable, or at worst ill-suited, to meet national security requirements. Decisive battle then should be considered a possible method for securing political objects in war.

The US military recognizes three distinct yet complimentary and interrelated levels of war: strategic, operational and tactical. Understanding these levels, their purposes and their linkages, is crucial to developing a construct for decisive battle in contemporary military contests.

LEVELS OF WAR

The strategic level of warfare is focused on national, alliance or coalition objectives.⁹⁴ Military strategy seeks to employ the means of military force to secure stated political objectives.⁹⁵ "War, therefore, is to be understood herein as any condition in which one State employs physical violence against another" and the "fundamental objective of the armed forces is, therefore, the reduction of the opposing will to resist...attained through the use of violence or threat thereof."⁹⁶ Theater military strategy is concerned with the skillful application of power using methods superior to those of an enemy in the military contest. The theater strategy establishes the focus for operational planning.

The operational level of warfare provides the "vital link between strategic objectives and [the] tactical employment of forces. At the operational level, military forces attain strategic objectives through the design, organization, and conduct of campaigns and major operations."⁹⁷ Operational art and the operational level of war are not synonymous. The operational level of war is that tier, within the framework of our military's warfighting doctrine, where opportunities for the application of the operational art exists. "Operational art involves the decision [of whether] to accept or decline battle, and [of] where and when to fight" in order to meet specific strategic aims.⁹⁸ "In its simplest expression, operational art determines when, where, and for what purpose...forces will fight."⁹⁹

James Schneider characterizes operational art as the creative use of distributed operations, extended in space and time but unified by a common aim.¹⁰⁰ Strategic aims are secured by imposing our nation's will upon an enemy, by removing his will to resist. They are achieved through the proper application of tactical forces by operational planners. Operational art secures strategic aims through the application of force across time and space to seize, retain or deny the operational freedom of action.¹⁰¹

By denying the enemy his freedom of action, we deny his ability to resist and, as such, enable the imposition of our will. In the context of decisive battle, the operational artist seeks to dominate the operational freedom of action immediately through properly focused operational and tactical actions against an enemy's principle means of resistance.

The tactical level of war is the "art and science of employing available means to win battles and engagements."¹⁰² The tactical level of war translates operational aims into action. Tactical actions which are not linked to operational objectives are of little value and represent a waste of precious resources.

BATTLEFIELD OR BATTLESPACE?

The operational artist must understand the distributed nature of modern war. The battlefield has expanded in all dimensions due to advances in weapon systems, communications and mobility. As such, the term battlefield may be inappropriate for use at the operational level in contemporary war. A more appropriate term is battlespace as it captures the essence of the whole of the military contest.

US Army doctrine defines battlespace as a "physical volume that...includes the breadth, depth, and height in which the commander positions and moves assets over time to [dominate] the enemy and protect the [friendly] force."¹⁰³ In classical battles the battlespace was defined by the battlefield, where the contending armies met each other in close quarters to settle the political dispute by way of military contest. Modern operational battlespace includes the air, land, maritime, space and electronic dimensions of the military contest. Contemporary decisive battle requires domination of the operational battlespace to ensure the operational freedom of action necessary to defeat an enemy and secure strategic aims. This requires the immediate disruption of an enemy's ability to resist, his aggregate source of power, his center of gravity.

CENTER OF GRAVITY

"That characteristic, capability, or locality from which a military force derives its freedom of action, physical strength or will to fight" is defined in FM 100-5, Operations, as the center of gravity.¹⁰⁴ It is "those sources of strength or balance vital...to the smooth and reliable operation of the whole [force] ..[the] loss [of which] unbalances the entire structure, producing a cascading deterioration in cohesion and effectiveness."¹⁰⁵ This description supports Clausewitz's theory that the center of gravity is "the hub of all power and movement, on which everything depends."¹⁰⁶

Clausewitz tends to confuse attempts at reaching a definition for center of gravity. Fortunately, he returns to the idea of concentrated forces, mass and that force capable of delivering the "heaviest blow"¹⁰⁷ The "heaviest blow" refers to that action which is the greatest threat to an opponent's selected warfighting method. Loss or disruption of the center of gravity severely jeopardizes a commander's ability to employ his warfighting method, making him vulnerable to his opponent's selected methods, organization or systems.

When determining an enemy force's center of gravity, the commander must identify that force which constitutes the greatest threat to the accomplishment of his purpose.¹⁰⁸ This may not be the entire enemy force. Many subordinate elements within the enemy's composite force offer only contributory effects. Instead the enemy's center of gravity is that portion of the greater force which most significantly threatens attainment of the desired object.

A military contest is characterized by the clash of opposing forces. Within each opposing force there exists a center of gravity, organized and oriented toward dominating the freedom of action within a given battlespace through the employment of selected methods. Retention of a cohesive center of gravity provides a degree of stability within the complex environment of war. That stability comes from the relative assurance that the center of gravity is properly organized and oriented on attainment of the military purpose, and that it can effectively influence actions within the necessary dimensions of a given battlespace. One denies his opponent the ability to effectively employ his selected method of war by dominating the operational freedom of action .

Battlespace domination, if not total, must include those dimensions which directly affect the enemy's selected method of waging war. "Since one cannot concentrate land as one can an army, it will be necessary to divide the army."¹⁰⁹ Given the distributed nature of the modern battlefield, a combatant may employ multiple sources of power throughout his operational battlespace. Each of those sources of power effectively contributes, in some fashion, to an aggregate ability to fight across certain dimensions of a given battlespace. Clausewitz defined the warfighting contribution of each those sources of power as a sphere of effectiveness.¹¹⁰ Decisive battle requires that domination over these spheres of effectiveness occur near-instantaneously to rapidly defeat the opponent's center of gravity. This does not imply that battlespace domination in itself will ensure quick decisive victory. The necessary domination may come only as the result of a long, protracted affair which relies on a method of successive operations over time.

The United States experience in Vietnam demonstrates the importance of dominating the critical portions of the operational battlespace. Air superiority over

Southeast Asia had negligible effects on any attempts to impose US will on the Viet Cong or the North Vietnamese. The selected US methods were inferior to *dau tranh* over the long term as they were unsuitable to the conditions of the military contest.¹¹¹ *Dau tranh* provided an asymmetrical advantage over a method which relied principally on large scale battles to resolve the military contest.

Conversely, US methods in Operation DESERT STORM (1991) demonstrated the contributory effects of air and maritime domination to the decisive land battle. By effectively dominating the air and maritime spheres of effectiveness, the US-led coalition was able to quickly gain dominance in the land battle. This was achieved through the employment of superior methods and systems to defeat the Iraqi center of gravity, the Republican Guard divisions, followed by a deliberate pursuit of retreating Iraqi forces. That defeat led to a quick resolution of the military contest and attainment of strategic aims within 100 hours of ground combat. It must be remembered that the ground battle came after nearly a month of relentless air, naval, combat aviation and artillery attacks against the Iraqi army. This preliminary phase of offensively-oriented attrition was designed to establish the conditions necessary for a successful ground battle which could achieve its operational objectives, from its initial dispositions, in the initial action.

Analysis of DESERT STORM indicates that with the spatial expansion of the battlefield came a temporal expansion as well. That temporal expansion was based on an appreciation of the effects required to achieve battlespace domination in the initial action. Coalition actions in Operation DESERT STORM demonstrated a contemporary rendition of the Napoleonic strategy of the single point. Forces converged on their initial positions within the operational battlespace prior to the outset of battle. The positioning of coalition forces provided them a relative advantage over the defending Iraqi forces from which they could force convergence with the enemy at a single point--finite in time and space--for climactic battle employing the VII (US) Corps as the *masse de manoeuvre* ¹¹²

Initial air, naval, combat aviation and artillery attacks against the Iraqi military created and sustained the shock effect necessary to effectively reduce Iraqi resistance across the necessary spheres of effectiveness. This gained the operational freedom of action necessary for continued air and future ground action. From their initial dispositions, allied ground forces effectively closed on and defeated Iraqi resistance within the ground sphere of effectiveness, concluding with the defeat of the Iraqi military center of gravity, the Republican Guard.

Unlike the classical battles of Napoleon, the center of gravity may not present itself as a solid homogenous group of forces. It may exist and operate dispersed over wide areas, able to concentrate its effects via technological advantages. It may remain dispersed

in the form of an infantry-based army which employs methods similar to *dau tranh*. Rapid neutralization of a dispersed center of gravity may not be possible. Decisive battle therefore may not be a feasible operational option. Recognition of the enemy's warfighting method is critical to selecting an operational method which adequately supports the strategic aim. Defeat of the enemy's center of gravity may require the application of methods which are more successive in nature. To use the wisdom of Moltke the elder, an error in the selected method can hardly be corrected during the course of a campaign.¹¹³ To wage decisive battle, the center of gravity must be vulnerable to immediate neutralization.

In review, the enemy's operational center of gravity is that force which most significantly threatens the attainment of the operational object. It may exist as a consolidated whole as it did in Napoleonic times. It may exist as distributed sources of power whose combined spheres of effectiveness contribute to an aggregate warfighting ability across time and space. In either case, defeat of the center of gravity is essential to battlefield success.

Clausewitz determined that success on the battlefield required the concentration of superior strength at a decisive point. "Relative superiority is...frequently based on the correct appraisal of this decisive point, on suitable planning from the start; which leads to an appropriate disposition of the forces, and on the resolution needed to sacrifice nonessentials for the sake of essentials." The Prussian's analysis fit well for large scale battles of the nineteenth century. It may also be applied to the distributed nature of contemporary war.

Clausewitz provided a framework for understanding that victory in battle is dependent on the concentration and application of superior force against a decisive point to defeat an adversary's principle means of resistance, his center of gravity. "Identification of enemy centers of gravity requires detailed knowledge and understanding of how [the enemy forces] organize, fight, make decisions, and their physical and psychological strengths and weaknesses."¹¹⁴ In distributed war, success requires an understanding of those spheres of effectiveness which contribute to an enemy's aggregate ability to resist effectively the application of force.

To wage contemporary decisive battle an enemy's center of gravity must be neutralized from the outset. This requires the identification of an operational decisive point against which the concentrated effects of superior combat power may be directed, in the initial operational action, to render an enemy incapable of further resistance.

THE DECISIVE POINT

US Army doctrine states that, "Decisive points are not centers of gravity; they are the keys to getting at centers of gravity."¹¹⁵ The object of the military contest is the defeat of an opposing force's center of gravity. This is achieved by throwing the center of gravity off balance, thus neutralizing the effects of its available combat power and denying its ability to effectively control, or threaten domination of, the operational battlespace. Decisive battle requires the immediate removal of an enemy forces' ability to dominate the battlefield freedom of action, thus removing the significant threat to friendly actions.

US Army doctrine states that "normally, more decisive points will be in a theater than a commander can seize, retain, or destroy with his available resources. Therefore, planners must analyze all potential decisive points and determine which [will] enable eventual attack of the enemy's center of gravity. Commanders designate the most important decisive points as objectives and allocate resources to seize or destroy them."¹¹⁶ US Army doctrine does not seem to recognize the nature of the distributed battlefield. It holds that multiple decisive points exist within an operational battlespace and that success at only one of those points will not defeat the enemy's center of gravity. Instead, it requires that commanders designate "the most important decisive points as objectives." In this definition then, no point is truly decisive.

James Schneider's "Theory of the Operational Art" offers that the decisive point comes in three forms: physical, cybernetic, and moral. Physical decisive points include key terrain, bases of operations, a formation or anything that is physically tangible and is an extension of the terrain, whether geological or manmade.¹¹⁷ Schneider's physical points seem to be constant, fixed in time and space. Unfortunately, the dynamic nature of combat denies the notion that any fixed point will remain decisive throughout the course of the military contest. Physical points provide only a potential for properly arranging the effects of combat power against an enemy force. As such, they only have value as they relate to an enemy force. Actions at these physical points which do not unbalance the enemy's center of gravity or seek to dominate the battlefield freedom of action are of little consequence.

Cybernetic and moral decisive points represent enemy capabilities to fight or the will to sustain the ability to fight. Cybernetic decisive points are manmade. They sustain command, control, communications and the processing of information.¹¹⁸ They contribute to the coherence of a center of gravity by enabling direction and control. Destruction of cybernetic elements may positively affect a sphere of effectiveness and stability which sustains a center of gravity, and may therefore achieve decisive effects.

Moral decisive points sustain the force's morale--its magnitude of will.¹¹⁹ The defeat of the whole of the enemy's morale may be achieved through the application of either lethal, or non-lethal fires. The moral decisive point may be attacked through destruction of the enemy's forces or through the effective employment of psychological warfare activities. Psychological warfare activities may create the emotional shock effects necessary to defeat the enemy's fighting spirit. For decisive battle, the combined effects of lethal and non-lethal activities seek the rapid defeat of the enemy's will to fight. Once that effect is attained, the enemy's center of gravity is defeated.

Schneider's analysis of decisive points provides a useful framework for arranging and focusing available combat power against critical parts of an enemy's warfighting capabilities. His analysis though, seems to support the US Army doctrinal view of multiple decisive points, with none being singularly decisive.

Actions in war are not "an exercise...directed at inanimate matter...or at matter which is animate but passive and unyielding", but are instead "directed at an animate object that reacts."¹²⁰ Actions against the enemy from which he recovers are generally of little consequence as they do not achieve the necessary battlespace domination and are therefore not considered decisive. Those same events may be considered critical however, if the enemy only partially recovers from the action. This results in a deteriorated state of cohesion within the opponent's center of gravity and may establish the conditions for future decisive action. This construct supports the method of successive operations in which subsequent actions build upon earlier successes.

Actions at the decisive point should put an indisputable and definite end to the military contest.¹²¹ In 1838 Antoine Henri Jomini provided the military profession his *Précis de l'Art de la Guerre* (Summary of the Art of War), an interpretation of Napoleonic warfare. Within that theoretical treatise he discussed the value of warfighting methods which sought to achieve mass and concentration at the decisive point.

Jomini believed that, "*the art of war* [consisted of] bringing into action upon the decisive point of the theater of operations the greatest possible force" (emphasis in original).¹²² He therefore established, as the fundamental principle of war, the necessity of throwing the mass of one's army upon the decisive point, or upon that portion of the hostile line which is of the first importance to overthrow.¹²³ For decisive battle, the enemy force "of the first importance to overthrow" is obviously that force which is capable of delivering the "heaviest blow," the enemy center of gravity.¹²⁴ Clearly Jomini recognized the decisive point as being singular in nature and that effective employment of superior combat power there would lead to the defeat of the enemy's center of gravity.

Arrangements should therefore be made for striking the decisive blow upon this point maneuvering to engage fractions of the hostile [force] with the bulk of one's own forces and to so arrange [one's] forces that they shall engage at the proper time, and with ample energy.¹²⁵

Jomini does not imply that battlefield success is determined by actions at several decisive points, but rather by concentrating and applying superior combat power against one. This definition is important to contemporary war. It demands that operational and tactical actions be properly resourced and focused to achieve the greatest effects against an enemy's aggregate ability to fight.

If the enemy's forces are...too much extended the decisive point is his center, for by piercing that his forces will be more divided, their weakness increased...but in every other case when it is possible the best direction will be upon one of the flanks, and then upon the rear.¹²⁶

Jomini did not define the decisive point as fixed in time and space. Instead he recognized it as relative to the arrangement of both friendly and enemy combat power dynamics within given spheres of effectiveness. He recognized the decisive point as a condition of the battlefield's characteristics in which the enemy's center of gravity was vulnerable to attack. This offers us insight as to the true nature of the decisive point on the distributed battlefield. It exists as a collective vulnerability of the enemy's center of gravity. It is defined by a consideration of the enemy's selected warfighting methods, systems and organization and the relationship to operational battlespace conditions, friendly forces, time and space. As such, it is a window of opportunity through which operational leverage may be applied against a vulnerability in the enemy's center of gravity.

Unbalancing an opponent's center of gravity requires a method which achieves superior concentrated power against a point of leverage to unbalance and subsequently defeat an enemy's center of gravity. Given the distributed nature of contemporary war, the center of gravity may exist as dispersed spheres of effectiveness whose combined operational effects represent the most significant threat to the friendly commander's mission. Therefore, the mass of an enemy's army will most probably not present itself in a homogenous form as a single target for the mass of the friendly army to be thrown against. Instead, operational planners will be forced to achieve similar results against distributed enemy sources of power. In contemporary war, leverage must be achieved against a decisive point that may exist across time and space as a collective vulnerability of the enemy's center of gravity.

The decisive point exists as a condition of the enemy's aggregate ability to fight. It may not exist as a single point, fixed in time and space, but rather as a collection of

defining characteristics across the enemy's spheres of effectiveness. Schneider's analysis of physical, cybernetic and moral points provides valuable insight for considering the characteristics of the operational decisive point on the distributed battlefield. The operational planner must determine which enemy spheres of effectiveness most significantly threaten the operational freedom of action. He must determine where and when those sources of power are vulnerable to attack. He must determine how best to attack those vulnerabilities to achieve the operational leverage necessary to unbalance and defeat his enemy's center of gravity.

These considerations provide the focus for directing operational and tactical warfighting systems and organizations against distributed points of action. This gives rise to the notion of distributed concentration.

DISTRIBUTED CONCENTRATION

On the distributed battlefield the decisive point may exist across time and space as a collective vulnerability in the whole of the enemy's ability to wage war. It may consist of physical, cybernetic and moral characteristics within each of the enemy's distributed sources of power. The operational artist achieves the leverage necessary against these distributed vulnerabilities through properly focused and weighted operational and tactical activities. James Schneider provides insight into the arrangement and focus of these distributed actions. They are arranged and focused to force a near-simultaneous convergence of friendly combat power across time and space, with the enemy's cumulative ability to wage war. This convergence occurs at various points of action, defined by the characteristics of the operational decisive point. The successes at these points of action coalesce to create a concentrated operational effect against the decisive point, achieving the operational leverage necessary to unbalance the enemy's center of gravity.

The methods, systems and organization of the opponent must be considered to ensure the proper mix of friendly capabilities at these various points of action. The enemy's ability to resist is attacked in such a manner that operational and tactical paralysis is achieved across the necessary spheres of effectiveness, thus placing the enemy center of gravity in a position of great vulnerability. For decisive battle, the initial operational and tactical actions should achieve a cumulative, debilitating effect which results in the rapid deterioration of the enemy's fighting strength.

Decisive battle requires that these operational and tactical effects occur nearly simultaneously to render an opponent incapable of further effective resistance. The cumulative effect of these actions creates the shock and leverage necessary to paralyze the

enemy's ability to react effectively to the continued application of force. These points of action must be properly resourced to ensure the continuous application of pressure against the operational decisive point until the strategic aim is secured. Failure to do so may result in premature culmination of the initial action. If such culmination is inescapable then decisive battle may not be a feasible method for attaining the strategic object, and therefore should not be undertaken. Instead, the method of successive operations should be employed along extended lines of resistance to achieve the strategic aims.

Operation JUST CAUSE (1989) is a prime example of how decisive battle may be waged in the future. The method employed by US forces achieved the distributed concentration necessary to dominate the operational battlespace and rapidly defeat the Panamanian Defense Forces of Manuel Noriega. JUST CAUSE demonstrated the ability of asymmetrical advantages in method, systems and organizations to achieve decisive effects on a contemporary distributed battlefield.

CHAPTER 3--OPERATION JUST CAUSE: Decisive Battle Through Distributed Concentration

FM 100-7, Decisive Force: The Army In Theater Operations describes Operation JUST CAUSE as the first war of the twenty-first century. This proclamation is attributed to the "speed and scope of the force projection, the simultaneity and depth of attacks at all levels of war...and the rapid reconstitution of national strategic capabilities."¹²⁷ Analysis of Operation JUST CAUSE demonstrates that distributed concentration is a viable method for waging contemporary decisive battle.

The Panamanian Defense Force (PDF) was the principle Panamanian political body. It was involved in all aspects of the corrupt Noriega government and served as a badge of affluence for its members. For twenty-one years military dictatorship proved a robust institution, brought to its full capability by Manuel Noriega.¹²⁸ Noriega's government was viewed as both unpredictable and hostile to US regional security interests and in 1989, the Bush administration wanted Noriega out.¹²⁹ US strategic aims in Panama were two fold: the protection of US citizens and interests, and the installation of a friendly, democratic government.¹³⁰

The PDF represented the Panamanian military's center of gravity. It was principally an infantry-based force organized into thirteen military zones. The PDF organization totaled two battalions, ten independent infantry companies, a cavalry squadron, the Doberman riot control company, and a special forces command consisting of an assortment of commandos, including the Israeli-trained special forces known as the

UESAT.¹³¹ Additionally, Noriega had the support of an unknown number of locally organized, well armed paramilitary Dignity Battalions. Twelve vessels comprised Noriega's navy, including fast patrol boats, and a company of marines. PDF air forces consisted of thirty-eight, various fixed wing aircraft and seventeen helicopters. Air defense was provided by an assortment of guns, the most significant being the Soviet ZPU-4.

Joint Task Force-South (JTF-South) analyses of the PDF revealed its vulnerabilities: the PDF employed methods which required a high degree of centralized control. It could respond rapidly to a single crisis with forces from across the isthmus. However, it was capable of only modest independent action, and was in no way organized to respond to multiple challenges in short order. It lacked sufficient systems to enable it to fight effectively at night, and it was without an effective air defense system. These vulnerabilities collectively comprised the PDF decisive point. To defeat the PDF, JTF-South would have to employ methods which exploited each of these vulnerabilities and nullified any PDF attempts at mutual support.

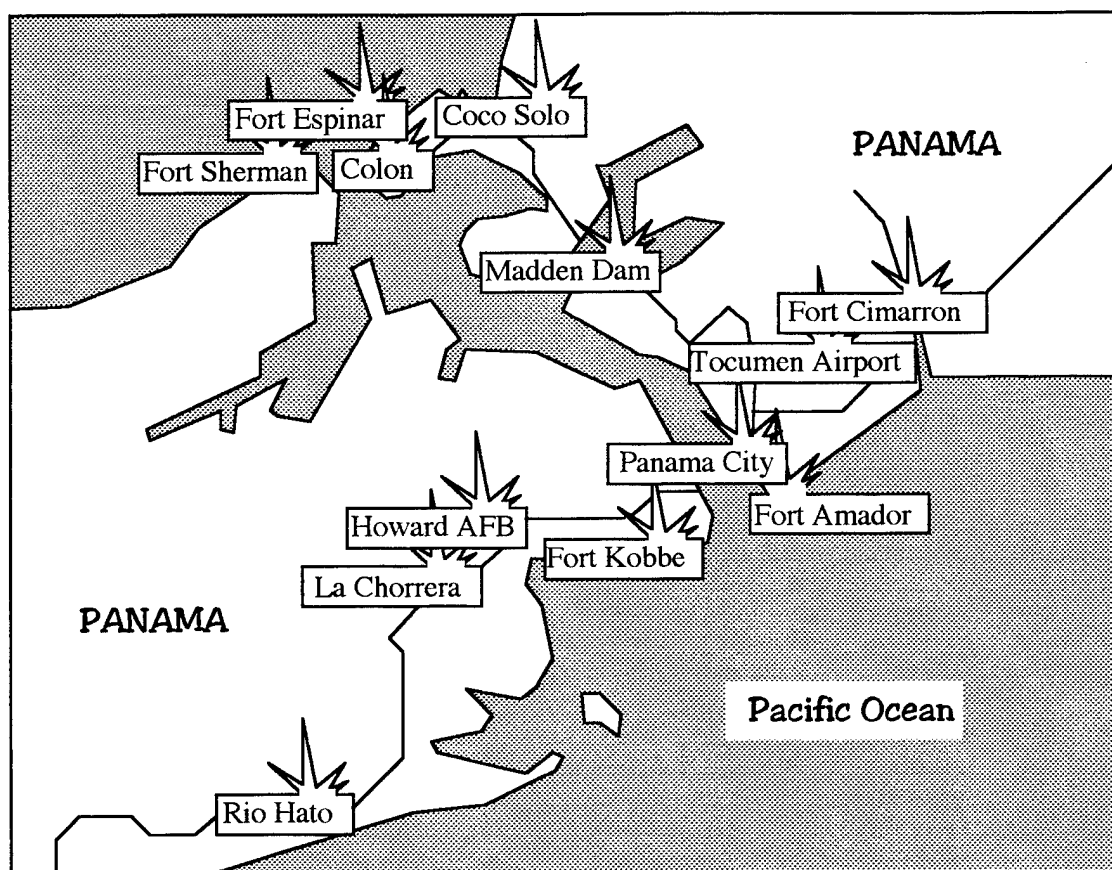


FIGURE 2: OPERATION JUST CAUSE H-HOUR TARGETS¹³²

At 0103, 20 December 1989, JTF-South, consisting of army, air force, navy, marines and special operations forces, began its attack against 27 separate operational and tactical points of action to achieve the battlespace domination necessary for the conduct of Operation JUST CAUSE. (FIGURE 2). The intent of General Carl Stiner, commander of JTF-South, was to deliver a knockout punch to “decapitate” the PDF.¹³³ Through the employment of properly focused operational and tactical actions, JTF-South was achieved the near-instantaneous shock necessary to paralyze the PDF, quickly dominate the freedom of action and establish effective control of most Panamanian military targets and much of the infrastructure within 24 hours.¹³⁴

Operation JUST CAUSE was based on four principles--maximum surprise, maximum security of US interests, minimum collateral damage and minimum force. “Simultaneity should minimize casualties, fully engage all PDF units, and ensure that PDF leadership was dislodged.”¹³⁵ General Stiner determined that it was better to neutralize the Panamanians quickly before they could strike. His method of warfighting involved swift, violent action, at night, against points of decision to paralyze the enemy’s ability to react.¹³⁶

There were certain key things that we had to do. We...had to knock out the [PDF central headquarters in Panama City] Comandancia, to neutralize the command and control. We knew we had to take down the police and most of the institutions of government because they, too, were run by the PDF. We knew that we had to take on those PDF units that could influence this action. If we did that--and we did it all simultaneously to completely paralyze them and neutralize them--anything left would be sitting out there with no guidance, no connectivity, no instruction. We could then go after them separately.¹³⁷

JUST CAUSE was executed during the hours of darkness, struck multiple targets simultaneously with strategic and operational fires, and followed those strikes immediately with the rapid application of tactical forces to maintain overwhelming pressure against distributed sources of resistance. Initial JTF-South actions focused on “decapitating the snake,” severing Noriega’s line of control which would enable him to organize the resistance of his PDF forces. He had demonstrated his effectiveness in controlling and directing the actions of loyal PDF forces during an attempted coup in October 1989. US observations of PDF movements to reinforce Noriega’s efforts at La Comandancia had provided them the information necessary to develop a plan which would meet Stiner’s intentions.

The opening actions were to be focused on defeating PDF forces in place, or preventing their reinforcement against friendly actions along principle avenues of approach.

JTF-South determined that it had to prevent the movement of the Macho de Monte from Rio Hato, Battalion 2000 from Fort Cimarron and the PDF 1st Cavalry Squadron and UESAT commandos from Panama Viejo.¹³⁸ These actions successfully prevented the PDF from gaining effective control over any sphere of effectiveness. US methods allowed for quick domination across the operational battlespace, effectively removing the ability of Noriega and the PDF to resist continued application of military force.

The simultaneous neutralization of the PDF's ability to dominate any sphere of effectiveness relied upon a temporal and physical analysis of the operational battlespace. By analyzing the JTF-South decision process it may be deduced that the operational decisive point existed as a combination of the PDF's vulnerabilities between midnight and 0400. This time block gave JTF-South four hours of darkness within which to gain domination over specific spheres of effectiveness, paralyze the PDF command and control structure, seize the operational freedom of action, and throw the Panamanian center of gravity off balance.¹³⁹

The operational and tactical methods employed by JTF-South optimized the effectiveness of superior organization and systems. As a joint force, JTF-South was able to effectively wield the combined effects of multi-service combat power against distributed points of resistance. Attacking at night with overwhelming force exploited the limitations of inferior PDF methods and systems. Original plans for war in Panama called for slow, deliberate actions against the PDF. JTF-South recognized that the best method for defeating the PDF was a swift, highly mobile, decisive offensive conducted at night against distributed points of resistance. The conduct of JUST CAUSE demonstrated how asymmetrical advantages in method, systems and organization enabled JTF-South to successfully wage decisive battle against a distributed enemy. It further demonstrated the operational applicability of distributed concentration to contemporary military contests.

SUMMARY AND CONCLUSIONS

To wage decisive battle, it is necessary to employ warfighting methods which rapidly neutralize an enemy's center of gravity. These methods must force a near-simultaneous convergence, across time and space, of superior, concentrated combat power effects upon an operational decisive point. Asymmetrical advantages must be employed in such a manner that the enemy's aggregate ability to resist the application of force is rapidly negated and any immediate threat of significant counter-action is eliminated. Finally, the initial operational action must secure the desired political objectives for which the nation originally went to war.

The asymmetrical advantage gained by superior warfighting methods seems to be the distinguishing feature in a combatant's ability to wage decisive battle. Superiority in warfighting methods allow a combatant to optimize the advantages of available systems and organization. Without a superior warfighting method, the effects of seemingly superior systems and organization may be negated, as evidenced by the United State's military experience in Vietnam. Importantly though, the communist's superior methods were not capable of achieving a short decisive victory in the military contest. Theirs was a method of exhaustion which proved superior to US methods which sought victory through the conduct of large unit battles.

History demonstrates the continuous quest to secure, through a single decisive blow, the objects for which nations go to war. This quest is characterized by a continuum of clashes between symmetrical and asymmetrical relationships. When symmetry in method, organization and systems existed between opponents, war tended to drag on for periods of extended indecision. Warfare remained indecisive until, through the application of superior methods, systems or organization, an asymmetrical advantage was obtained.

Battle had long been seen as the means to settle politically based disputes, but warfare became a costly business and campaigns of long duration placed a great strain upon the resources of the state. Military practitioners and innovators employed new methods, systems and organizations for waging war, all in the attempt to shorten the military contest through the conduct of decisive battle. Interestingly enough, decisive battle required an opponent who was willing to allow his army to be engaged. In the eighteenth century, wars of maneuver predominated. These campaigns were characterized by great military waltzes as armies avoided direct confrontation. Linear tactics and slow deployments onto the field of battle enabled opponents to consider alternatives and withdraw.

On the battlefields of the nineteenth century, Napoleonic warfare demonstrated the viability of waging decisive battle to rapidly secure the objects of war. Napoleon introduced superior methods of war, better organizations, and improved systems to create an asymmetrical advantage over contemporary adversaries in Europe. But other European states adapted to his way of war, eliminating his once asymmetrical advantages.

Napoleonic victories established decisive battle as a principle means of settling political disputes. Because battle involved the clash of opposing national wills, the defeat of one's opponent would surely result in victory. Clausewitz determined that victory in battle required the defeat of an opponent's locus of power and movement--the center of gravity. The center of gravity on the Napoleonic battlefields was defeated by throwing the concentrated combat power available to one's army upon an exposed vulnerability of the enemy. Jomini referred to this point as decisive and so established the fundamental

principle of war, one which would influence methods well beyond his time. These theories worked well for the large-scale battles of the nineteenth century but advances in warfighting systems increased the lethality and operational mobility of the fighting forces. This, coupled with the increased size of national armies, a lack of tactical mobility and an increasingly wider front, forced warfare in Europe to grind again toward a protracted siege after the culmination of the German attack in 1914. Symmetry in method, organization and systems resulted in a costly, protracted war of the trenches until advances in tactical mobility again provided advantages which served to break the gridlock.

As battlefields expanded, evolving warfighting systems enabled a greater dispersion of forces. The massing of armies against each other for decisive battle gave way to armies spread throughout the breadth and depth of a theater of war. Under those conditions military practitioners and theorists posited that strategic aims could only be secured using the method of successive operations.

Distributed battle, the realm of the operational artist, still demands the effective employment of methods which strike with superior concentrated force against a decisive point in order to unbalance an opponent's center of gravity. Analysis of contemporary wars suggests that operational decisive points are not fixed in time and space, but are rather characterized by the distributed vulnerabilities in an opponent's ability to fight. Distributed concentration provides a method for achieving the immediate shock and paralysis in an opponent's center of gravity by attacking these distributed vulnerabilities near-simultaneously.

The author does not deny the applicability of successive operations in modern war. Instead, he offers that, given specific conditions, decisive battle is still a viable operational method for securing political objects through war. Operation JUST CAUSE demonstrates how distributed concentration was employed effectively to rapidly secure national interests in Panama. It demonstrates how properly focused operational and tactical actions coalesce to create the operational leverage necessary to throw an opponent's center of gravity.

Observers of the 1991 Gulf War have surely taken note of the time required to establish an adequate fighting force in a theater far removed from the continental United States. Future adversaries may not be as accommodating to our military's lodgment operations as Saddam Hussein was. Given national security requirements, the ambiguity of international conditions, and a force-projection strategy oriented on decisive victory in two nearly-simultaneous MRCs, decisive battle through distributed concentration may be regarded as a viable alternative for operational planners.

NOTES

¹ Bruce W. Menning, "An Operator/Planner's Introduction to Operational Art," Course Readings, Command and General Staff College, Course no. C510, (Fort Leavenworth, KS: US Army Command and General Staff College, 1995), (Hereafter referred to as: Menning, "An Operator/Planner's Introduction to Operational Art"), 333.

² Hon. William J. Perry, Secretary of Defense, Annual Report to the President and the Congress, (February 1995), 27.

³ Elaine M. Grossman, "OSD Debates How to Explain Military's Difficulty With Two War Strategy," Inside the Pentagon, (January 26, 1995), 10.

⁴ Russel F. Weigley. The Age of Battles: The Quest for Decisive Warfare from Breitenfeld to Waterloo, (Bloomington, IN: Indiana University Press, 1991), (Hereafter referred to as: Weigley, The Age of Battles), 536.

⁵ Analysis of data collected in a 1991 poll conducted by Americans Talk Issues suggests that for every increase by a factor of ten in the number of U.S. combat deaths, public support declined by 18.5 percentage points. The median acceptable ceiling for US combat deaths in an intervention was 100. For further information regarding the impact of combat casualties on public support of military operations see: Eric V. Larson, "Ends and Means in the Democratic Conversation: Understanding the Role of Casualties in Support for U.S. Military Operations." (Santa Monica, CA: RAND Graduate School of Policy Analysis, October, 1995).

⁶ Hon. William J. Perry, Secretary of Defense, Annual Report to the President and the Congress, (February 1995), 31.

⁷ Headquarters, Department of the Army Field Manual (FM) 100-7, "Decisive Force: The Army in Theater Operations," (May 1995), (Hereafter referred to as FM 100-7), 1-2.

⁸ Carl von Clausewitz, On War. Translated and edited by Michael Howard and Peter Paret. (Princeton, NJ: Princeton University Press, 1976), (Hereafter referred to as: Clausewitz), 79,80.

⁹ Menning, "An Operator/Planner's Introduction to Operational Art," 336.

¹⁰ James J. Schneider, "Vulcans' Anvil: The American Civil War and the Emergence of Operational Art," SAMS Monograph, 16 June 1991.

¹¹ Lieutenant Colonel Joseph B. Mitchell and Sir Edward Creasy. Twenty Decisive Battles of the World, (New York: Macmillan, 1964), (Hereafter referred to as: Twenty Decisive Battles), xv.

¹² Weigley, The Age of Battles, 538.

¹³ Robert M. Epstein. "Napoleon's Last Victory: 1809 and the Emergence of Modern War," School Of Advanced Military Studies (Fort Leavenworth, KS: US Army Command and General Staff College, 02 November, 1992), (Hereafter referred to as: Epstein, "Emergence of Modern War"), 10.

¹⁴ Weigley, The Age of Battles, xiv.

¹⁵ Ibid., xv.

¹⁶ Chairman of the Joint Chiefs of Staff (CJCS) Joint Publication 3-0: Doctrine for Joint Operations, (Maryland: US Army AG Publication Center, 1993), (Hereafter referred to as JP 3-0), I-6, I-11, I-13.

¹⁷ Gordon A. Craig. "Delbrück: The Military Historian." In Makers of Modern Strategy: Military Thought from Machiavelli to Hitler, Ed. Edward Meade Earle (Princeton: Princeton University Press, 1943), (Hereafter referred to as: Delbrück), 272.

¹⁸ Ibid., 271.

¹⁹ History indicates that the symmetrical relationship between selected warfighting methods either establishes or denies the opportunity for the conduct of decisive battle. The following chart provides a quick description of those relationships and the patterns of war they support:

N----->E = PROTRACTION	<u>LEGEND:</u> N=Niederwerfungsstrategie E=Ermattungsstrategie
E----->N = PROTRACTION	
E----->E = PROTRACTION	
N----->N = QUICK, DECISIVE BATTLE	

²⁰ Robert M. Epstein. "Patterns of Change and Continuity in Nineteenth-Century Warfare." The Journal of Military History, Vol. 56, No. 3 (July 1992), (Hereafter referred to as Epstein: "Patterns of Change"): 378.

²¹ Gunther E. Rothenberg "Maurice of Nassau, Gustavus Adolphus, Raimondo Montecuccoli, and the 'Military Revolution' of the Seventeenth Century," in Makers of Modern Strategy: from Machiavelli to the Nuclear Age, ed. Peter Paret (Princeton: Princeton University Press, 1986), (Hereafter referred to as: Rothenberg, "Maurice of Nassau"), 32.

²² Richard A. Preston, and Sydney F. Wise. Men in Arms: A History of Warfare and Its Interrelationships with Western Society, 4th ed., (New York: Holt, Rinehart and Winston, 1979), (Hereafter referred to as: Men in Arms), 94.

²³ Felix Gilbert. "Machiavelli: The Renaissance of the Art of War," In Makers of Modern Strategy: from Machiavelli to the Nuclear Age, ed. Peter Paret (Princeton: Princeton University Press, 1986), (Hereafter referred to as: Gilbert), 14.

²⁴ Azar Gat. The Origins of Military Thought: From Enlightenment to Clausewitz. (Oxford: Clarendon Press, 1989), (Hereafter referred to as: Gat, The Origins of Military Thought), 2.

²⁵ Niccolò Machiavelli, The Prince, ch. 12, as quoted by Gilbert, 26.

²⁶ Ibid., 23.

²⁷ Gilbert, 25.

²⁸ Men in Arms, 100.

²⁹ Gat, The Origins of Military Thought, 3.

³⁰ Albert Sidney Britt III, Jerome A. O'Connell, Dave Richard Palmer and Gerald P. Stadler. The Dawn of Modern Warfare, West Point, New York: United States Military Academy, 1980 (Hereafter referred to as: Britt, et al., The Dawn of Modern Warfare), 20.

³¹ Gat, The Origins of Military Thought, 7.

- 32 Britt, et al., The Dawn of Modern Warfare, 20.
- 33 Ibid., 69.
- 34 Weigley, The Age of Battles, 53.
- 35 Britt, et al., The Dawn of Modern Warfare, 36.
- 36 Weigely, The Age of Battles, xii.
- 37 Michael Howard, War in European History, (Oxford: Oxford University Press, 1976), (Hereafter referred to as Howard, War in European History), 56.
- 38 Archer Jones, The Art of War in the Western World, (Oxford: Oxford University Press, 1987), (Hereafter referred to as: Jones, The Art of War), 220.
- 39 Britt, et al., The Dawn of Modern Warfare, 68.
- 40 Men in Arms, 56 and Rothenberg, "Maurice of Nassau," 42.
- 41 Howard, War in European History, 57.
- 42 Britt, et al., The Dawn of Modern Warfare, 66.
- 43 Weigely, The Age of Battles, 536.
- 44 Weigley, The Age of Battles, 540.
- 45 Ibid., 19.
- 46 Britt, et al., The Dawn of Modern Warfare, 66
- 47 Howard, War in European History, 58.
- 48 Men in Arms, 112.
- 49 Britt, et al., The Dawn of Modern Warfare, 72.
- 50 Weigely, The Age of Battles, 37.
- 51 Howard, War in European History, 59.
- 52 Men in Arms, 112.
- 53 Rothenberg, "Maurice of Nassau," 55.
- 54 Howard, War in European History, 60.
- 55 Britt, et al., The Dawn of Modern Warfare, 82.
- 56 Howard, War in European History, 60.
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- 59 Epstein, "Emergence of Modern War," 16.
- 60 Hew Strachan, European Armies and the Conduct of War, (London: Mackays of Chatham, 1983), (Hereafter referred to as Strachan), 32.
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- 62 Weigely, The Age of Battles, 265.
- 63 Ibid., 264.
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- 65 Bevin Alexander, How Great Generals Win, (New York: Norton & Company, Inc, 1993.), (Hereafter referred to as: How Great Generals Win), 100.
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- 73 Martin Van Crevald, Command in War, (Cambridge: Harvard University Press, 1985), 115.
- 74 James J. Schneider. "The Theory of The Empty Battlefield." JRUSL, (Sept. 1987), 37.
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- 77 Mikhail Tukhachevskiy, "New Problems in Warfare from the Art of War Colloquium," Course Readings, School of Advanced Military Studies, AMSP1: Foundation of Military Theory, (Leavenworth, KS: US Army Command and General Staff College), (Hereafter referred to as: Tukhachevskiy), 60.
- 78 Ibid., 42.

- 79 Ibid., 44.
- 80 Aleksandr Andreevich Svechin. Strategy. edited by Kent D. Lee. (Minneapolis: East View, 1992), (Hereafter referred to as: Svechin), 242-243.
- 81 Ibid., 241.
- 82 Clausewitz, 80, 227.
- 83 Anthony H. Cordesman and Abraham R. Wagner, The Lessons of Modern War, Vol. II: The Iran Iraq War, (San Francisco: Westview Press, 1990), (Hereafter referred to as Cordesman, Lessons of Modern War), 435.
- 84 Clausewitz, 245.
- 85 FM 100-7, 1-4.
- 86 Clausewitz, 79, 90, 240.
- 87 Menning, "An Operator/Planner's Introduction to Operational Art," 333.
- 88 Crane Brinton, Gordon A. Craig and Felix Gilbert, "Jomini" In Makers of Modern Strategy: from Machiavelli to Hitler, ed. Edward Mead Earle (Princeton: Princeton University Press, 1971), (Hereafter referred to as: Brinton, et al., "Jomini"), 80.
- 89 Clausewitz, 75.
- 90 Ibid., 87, 149.
- 91 JP 3-0, I-2.
- 92 Clausewitz, 75.
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- 94 FM 100-5, 1-3.
- 95 Clausewitz, 85. Clausewitz states that "war springs from some political purpose, it is natural that the prime cause of its existence will remain the supreme consideration in conducting it...Therefore, war is not merely an act of policy but a true political instrument, a continuation of political intercourse, carried on with other means...The political object is the goal, war is the means of reaching it, and means can never be considered in isolation of their purpose."
- 96 Edward E. Johnston, Sound Military Decision, (Newport: U.S. Naval College, 1942), 8.
- 97 FM 100-5, 1-3
- 98 John F. Antal, "Thoughts About Maneuver Warfare," in Richard D. Hooker's Maneuver Warfare: An Anthology, (Novato, CA: Presidio Press, 1993), 61.
- 99 FM 100-5, 6-2.
- 100 Vulcan's Anvil, 32.

- 101 Ibid., 39.
- 102 Department of the Army, FM 101-5-1: Operational Terms and Graphics (Final Draft), (Washington, DC: GPO, 15 July 1995), (Hereafter referred to as FM 101-5-1), 1-259.
- 103 FM 100-5, 6-12.
- 104 Ibid., 6-7.
- 105 Department of the Army, FM 100-5: Operations, (Washington, DC: GPO, 1986), 179. As referenced in Syllabus to AMSP Course 1: Foundation of Military Theory, School of Advanced Military Sciences, (Fort Leavenworth, KS: U.S. Army Command and General Staff College, AY 95-96), 6.
- 106 Clausewitz, 595-596.
- 107 Clausewitz, 485.
- 108 FM 101-5-1, Operational Terms and Graphics, (Final Draft) 1993, defines the mission statement as, "The form of operation, task and *purpose*, which clearly indicates the action to be taken and *the reason therefore*." (Emphasis added), 1-181.
- 109 Clausewitz, 486.
- 110 Ibid., 486.
- 111 Douglass Pike, PAVN: People's Army of Vietnam, (Novato, CA: Presidio Press, 1986), 213-252.
- 112 Menning, 334, and Epstein, "Emergence of Modern War," 287. The *mass de manoeuvre* was designed to turn tactically either flank of the enemy to threaten his rear, and roll up his battle line.
- 113 Hajo Holborn, "Moltke and Schlieffen: The Prussian-German School," In Makers of Modern Strategy: from Machiavelli to Hitler, ed. Edward Mead Earle (Princeton: Princeton University Press, 1971), 179.
- The original quotation referred to the initial concentration of armies for the opening action of a campaign. Moltke felt that errors in the selected mobilization and initial concentration could prove disastrous. The selection of an inappropriate method may prove disastrous also. Dependence upon a single method for the conduct of war may prove equally disastrous. Efforts must be made to discern the enemy's selected method of combat to determine whether organization and systems provide the necessary advantage, or whether adaptations to current methods are required.
- 114 Joint Pub 3-0, III-28.
- 115 FM 100-5, 6-8.
- 116 FM 100-5, 6-8.
- 117 James J. Schneider, Theoretical Paper No. 3, "The Theory Of Operational Art," U. S. Army Command and General Staff College (Fort Leavenworth, KS: US Army Command and General Staff College, 1 March 1988), 28.
- 118 Ibid.
- 119 Ibid.

- 120 Clausewitz, 149.
- 121 The Random House Dictionary of the English Language, 2d edition, ed. Stuart Berg Flexner (New York: Random House, 1987), 517.
- 122 Jomini, 474, 475.
- 123 Antoine Henri Jomini, The Art of War. Edited by J.D. Hittle In Roots of Strategy, Book 2. (Harrisburg, PA: Stackpole Books, 1987), (hereafter referred to as Jomini), 462..
- 124 Clausewitz, 485
- 125 Jomini, 498, 461.
- 126 Ibid., 467, 469, 475.
- 127 FM 100-20, 1-6.
- 128 Donnelly, Thomas, Margaret Roth and Caleb Parker, Operation Just Cause: The Storming of Panama, (New York: Macmillan, inc., 1991), (Hereafter referred to as: Operation Just Cause), 395.
- 129 The Commanders, 83, and Frederick Kempe, Divorcing The Dictator: America's Bungled Affair With Noriega, (New York: Putnam, 1990), (Hereafter referred to as: Kempe), 117, 385.
- US concerns over the transfer of authority of the Panama Canal were fueled by the knowledge that at midnight December 31, 1999 that important commerce route would fall fully into Noriega's hands. In 1989 Panama was home to 12,000 American military personnel and their families.
- Panama also represented a significant link in the South American drug trade, and Noriega was suspected of involvement in illegal drug trafficking. Once one of the US CIA's key Latin American assets, the US now viewed him as an outlaw and an enemy of US interests. Noriega remained in power despite continuous attempts to remove him. Previous efforts at disposing Noriega had failed, to includethe Justice Department's drug indictments of Noriega in 1988, the aborted negotiations to drop the indictments if Noriega would give up power, economic sanctions, CIA covert action designed to unseat Noriega and an internal PDF coup in October 1989 designed to install the democratically elected government of Guillermo Endara.
- 130 Kemp, 85.
- 131 Operation Just Cause, 75. Unidad Especial Anti Terrorist. The UESAT were Noriega's most elite special forces commandos. They were trained in Israeli counterterrorist and other elite missions. They were originally headquartered at Flamenco Island, off Fort Amador.
- 132 Map created using figures from Operation Just Cause, 100 and FM 100-5, 6-2.
- 133 Operation Just Cause, 71.
- 134 FM 100-20, 1-6.
- 135 The Commanders, 135.
- 136 Operation Just Cause, 56.
- 137 General Carl Stiner, Commander VXIII (US) ABN Corps and JTF-S, as quoted in Operation Just Cause, 59.

138 Operation Just Cause, 71-74.

139 *Ibid.*, 101.

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